SONY®

COMPACT CONFERENCE PACKAGE

PCS-1600
PCS-1600P

COMPACT PROCESSOR

PCS-P160/P160P

REMOTE COMMANDER

PCS-R160

AC ADAPTOR

PCS-AC15

BRI BOARD

PCS-I160

V.35 BOARD

PCS-I161

SONY UPGRADE KIT

PCS-UC160/UC161

SERVICE MANUAL

Volume 1 1st Edition

MEMORY STICK TM

⚠警告

このマニュアルは，サービス専用です。
お客様が，このマニュアルに記載された設置や保守，点検，修理などを行うと感電や火災，人身事故につながることがあります。
危険をさけるため，サービストレーニングを受けた技術者のみご使用ください。

⚠WARNING

This manual is intended for qualified service personnel only.
To reduce the risk of electric shock, fire or injury, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

⚠WARNUNG

Die Anleitung ist nur für qualifiziertes Fachpersonal bestimmt.
Alle Wartungsarbeiten dürfen nur von qualifiziertem Fachpersonal ausgeführt werden. Um die Gefahr eines elektrischen Schlages, Feuergefahr und Verletzungen zu vermeiden, sind bei Wartungsarbeiten strikt die Angaben in der Anleitung zu befolgen. Andere als die angegeben Wartungsarbeiten dürfen nur von Personen ausgeführt werden, die eine spezielle Befähigung dazu besitzen.

⚠ AVERTISSEMENT

Ce manual est destiné uniquement aux personnes compétentes en charge de l’entretien. Afin de réduire les risques de décharge électrique, d’incendie ou de blessure n’effectuer que les réparations indiquées dans le mode d’emploi à moins d’être qualifié pour en effectuer d’autres. Pour toute réparation faire appel à une personne compétente uniquement.

CAUTION

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer’s instructions.

Vorsicht!

Explosionsgefahr bei unsachgemäßem Austausch der Batterie.

Ersatz nur durch denselben oder einen vom Hersteller empfohlenen ähnlichen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

ATTENTION

Il y a danger d’explosion s’il y a remplacement incorrect de la batterie.

Remplacer uniquement avec une batterie du même type ou d’un type équivalent recommandé par le constructeur.
Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

ADVARSEL!

Lithiumbatteri-Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri
af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

ADVARSEL

Lithiumbatteri - Eksplosjonsfare.
Ved utskifting benyttes kun batteri som anbefalt av apparatfabrikanten.
Brukt batteri returneres apparatleverandøren.

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en likvärdig typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt gällande föreskrifter.

VAROITUS

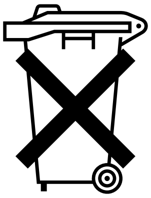
Paristo voi räjähtää jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.
Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

For the customers in the Netherlands
Voor de klanten in Nederland

Dit apparaat bevat een MnO_2-Li batterij voor memory back-up.

Raadpleeg uw leverancier over de verwijdering van de batterij op het moment dat u het apparaat bij einde levensduur afdankt.

Gooi de batterij niet weg. maar lever hem in als KCA.



Bij dit produkt zijn batterijen geleverd. Wanneer deze leeg zijn, moet u ze niet weggooien maar inleveren als KCA.

Für Kunden in Deutschland

Entsorgungshinweis: Bitte werfen Sie nur entladene Batterien in die Sammelboxen beim Handel oder den Kommunen. Entladen sind Batterien in der Regel dann, wenn das Gerät abschaltet und signalisiert “Batterie leer” oder nach längerer Gebrauchsdauer der Batterien “nicht mehr einwandfrei funktioniert”. Um sicherzugehen, kleben Sie die Batteriepole z.B. mit einem Klebestreifen ab oder geben Sie die Batterien einzeln in einen Plastikbeutel.

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Manual Structure

Purpose of this manual

This is the Service Manual for the Compact Conference Package PCS-1600/1600P. The manual contains servicing information regarding parts replacement, circuit operations, troubleshooting, and command list.

Related manuals

In addition to this Service Manual Vol. 1 (9-968-588-11), the following manuals are provided.

- **Operation Manual (supplied with PCS-1600/1600P)**
  Part No. : 3-205-055-11, 3-205-055-21
  Part of the Operation Manual is included also in this Service Manual, in Section 1, "Operating Instructions."

- **Service Manual Vol. 2**
  Part No. : 9-968-588-21
  Contains the semiconductor pin assignments, parts list, exploded views, schematic diagrams and board layouts.

Contents

The following is a summary of all the sections for understanding the contents of this manual.

Section 1 Operating Instructions

This section describes the contents of the operating instructions.

Section 2 Service Overview

This section describes the system configuration, external panel removal procedures during servicing, layouts of the main parts and boards, board removal procedures, notes and so on.

Section 3 Circuit Descriptions

Illustrates the block diagrams which show each board function and signal flow, and describes outlines of the circuits.

Section 4 Troubleshooting

This section describes the information related to when the system experiences a problem.

Section 5 On Screen Messages

In some cases messages appear on the monitor display when operating the compact processor. This section lists the messages that can be checked on the monitor display.

Section 6 PCS-UC160

This section describes how to install and repair the PCS-UC160.

SONY PCS-1600/1600P

SONY

3-205-055-**11**(1)

Compact Conference Package

Operating Instructions

Before operating the unit, please read this manual thoroughly and retain it for future reference.

PCS-1600/1600P MEMORY STICK TM

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Section 1
Operating Instructions

Reprinted from the operating instructions

Owner’s Record

The model and the serial numbers are located at the bottom. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. PCS-1600/1600P
Serial No. ______________

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

For the customers in the USA

This device complies with Part 15 of the FCC Rules.
Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a computing device pursuant to Subpart B of Part 15 of FCC Rules.

IMPORTANT INSTRUCTION TO USERS

1. This equipment complies with Part 68 of the FCC Rules. On the bottom of this equipment is a label that contains, among other information, the FCC registration number for this equipment. If requested, this information must be provided to the telephone company.
2. If this terminal equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.
3. The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.
4. If trouble is experienced with this equipment for repair or warranty information, please contact Sony Business Information Center ☎ 1-800-686-7669. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect this equipment until the problem is resolved.
5. This equipment cannot be used on public coin phone service provided by the telephone company. Connection to party line service is subject to state tariffs.

For the Customers in EU countries

Hereby, Sony Corporation, declares that this PCS-P160P is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
The PCS-P160P is intended to be connected to the ISDN using basic rate access interface in accordance with CTR 3 protocol.

This manual focuses on using ISDN lines to conduct a videoconference, but it also covers non-ISDN lines. If you use ISDN lines, consult your Sony dealer for more information.
- The ISDN service may not be available in some areas.

Voor de klanten in Nederland

Bij dit product zijn batterijen geleverd. Wanneer deze leeg zijn, moet u ze niet weggooien maar inleveren als KCA.

For the customers in Canada

This Class A digital apparatus complies with Canadian ICES-003.

NOTICE: The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document (s). The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

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Precautions

On Safety

Power supply

- Before operating the Compact Conference Package, make sure the operating voltage of the unit is identical with that of your local power supply. The Remote Commander operates on two size AA (R6) alkaline batteries.
- Do not unnaturally bend or crimp the power cord, and do not place heavy objects on it. Damage to the cord may result in fire or electric shock.
- To remove the power cord from an AC outlet, pull out the plug. (Do not pull out the cord itself.)

Do not disassemble the system

Do not open or disassemble the cabinets of the system. Electric shock may result if you touch the inside of the cabinets.

Do not put foreign objects into the system

Avoid having metallic or flammable object, liquid, or foreign matters fall into the cabinets of the system. Otherwise a malfunction may result.

In case of trouble

In case of trouble such as smoke, odd smell, or noise, turn off all units of the system. Disconnect all the power cords and connecting cords. Then contact the place of purchase or an authorized Sony representative.

ISDN

Never install telephone wiring during a lightning storm.
Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
Use caution when installing or modifying telephone lines.
Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
Do not use the telephone to report a gas leak in the vicinity of the leak.

On Handling

Installation/storage

Do not expose the system to:
- Extremely low or high temperatures.
- Damp or dusty room.
- Strong vibration.
- Near devices which generate strong magnetic fields.
- Near devices (such as radios) which transmit strong radio wave.
- Noisy place.

Cleaning

Wipe the cabinets and panels with a dry and soft cloth. If the stain is serious, slightly moisten the cloth with mild detergent. Afterward, use a dry cloth to wipe it. Do not use solvents such as thinner, benzine, alcohol, as they may damage the finish of the cabinets.

Chapter 1

Preparation

Features

The PCS-1600/1600P Compact Conference Package can connect a remote party via an ISDN (Integrated Services Digital Network) line[1]. It sends and receives images and sound, allowing you to have virtual face-to-face meetings with people in other cities or countries.
The system accommodates up to three participants in one location. However, you can add the optional PCS-A300 Microphones for additional participants.
If you upgrade the Compact Conference Package using the PCS-UC160 Upgrade Kit and PCS-I160 BRI Board, you can use the Compact Conference Package as the MCU (Multipoint Control Unit) to hold a point to multi-point meeting among four terminals.

1) You can install an optional interface board for connection with V.35 interface or with 6B channels. And if you upgrade the Compact Conference Package using the PCS-UC161 Upgrade Kit, you can connect a remote party via a LAN.

International standards

The PCS-1600/1600P Compact Conference Package complies with ITU-T Recommendations, for easy connection with remote parties overseas. (ITU-T Recommendations have been defined by WTSC (former CCITT).)
WTSC: World Telecommunications Standardization Committee
ITU: International Telecommunication Union

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Features

Light weight and small size

The Compact Processor has come to miniaturized to 2.5 kg (5 lb 8 oz) of mass, and it has a small size (258 × 55 × 206 mm; 10 1/4 × 2 1/4 × 8 1/8 inches), you can easily install the Compact Processor on your TV monitor.

Simple setup

The Compact Conference Package has the integral-type camera and microphone. You do not have to do a complicated connection; simply connect the TV monitor and the ISDN modular cable.

Help menu and setup wizard

The Help menu appears on the monitor screen for guidance, by pressing the HELP button. When you turn on the Compact Processor for the first time, the setup wizard appears on the monitor screen. Set up the system under its guidance.

The Remote Commander can operate a Sony TV monitor

You can operate a Sony TV monitor with the Remote Commander supplied with the Compact Conference Package.

Automatic tracking function

In addition to pan/tilt action, the automatic target tracking feature allows you to track a subject having the memorized color and brightness automatically.

Echo canceler

A built-in echo canceler decreases sound echo from walls in the meeting room, allowing for clear sound reproduction.

Equipped with the Memory Stick slot

Since the Compact Processor is equipped with the Memory Stick slot, you can use still images stored in the "Memory Stick".

Dual-monitor system

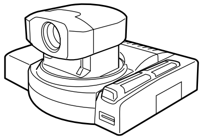
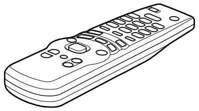
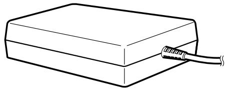
Two monitors can be used with the system, one is for moving picture and the other is for still image.

System Configuration

The PCS-1600/1600P Compact Conference Package is a basic system that can be enhanced with variety of optional equipment.

Basic System Equipment

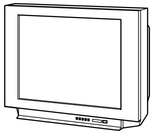
The PCS-1600/1600P Compact Conference Package forms the basis of the PCS-1600 series system.
The PCS-1600/1600P Compact Conference Package consists of the following units:

Unit	Description
PCS-P160/P160P Compact Processor PCS-C160/C160P Camera 	Contains the video codec, audio codec, echo canceler, network interfaces and system controller. This unit has an integral-type camera and microphone.
PCS-R160 Remote Commander 	Controls the Compact Processor. This can also be used to operate a Sony TV monitor.
PCS-AC15 AC adaptor 	Provides the power supply to the Compact Processor.

Options

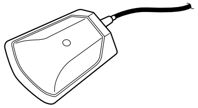
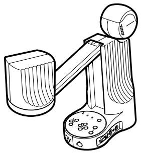
TV monitor

A TV monitor is required for your meetings.

Unit	Description
TV monitor 	A TV is used as a meeting monitor and speaker. It displays the remote party, graphics, and menus. If you use a Sony TV, you can operate it with the Remote Commander supplied with the Compact Conference Package. Two monitors are required for a dual-monitor system.

Other options

The following optional devices are also available to improve your meetings.

Unit	Description
PCS-A300 Microphone 	Allows you to accommodate extra two or three participants. You can connect two microphones. However, you cannot use both the built-in microphone and the external microphone at the same time.
PCS-DS150/DS150P Document Stand 	This document camera can transmit the video signal to the Compact Processor using infrared rays, without connecting a cable to the Compact Processor. You can easily transmit the RGB signal of a PC to the Compact Processor.

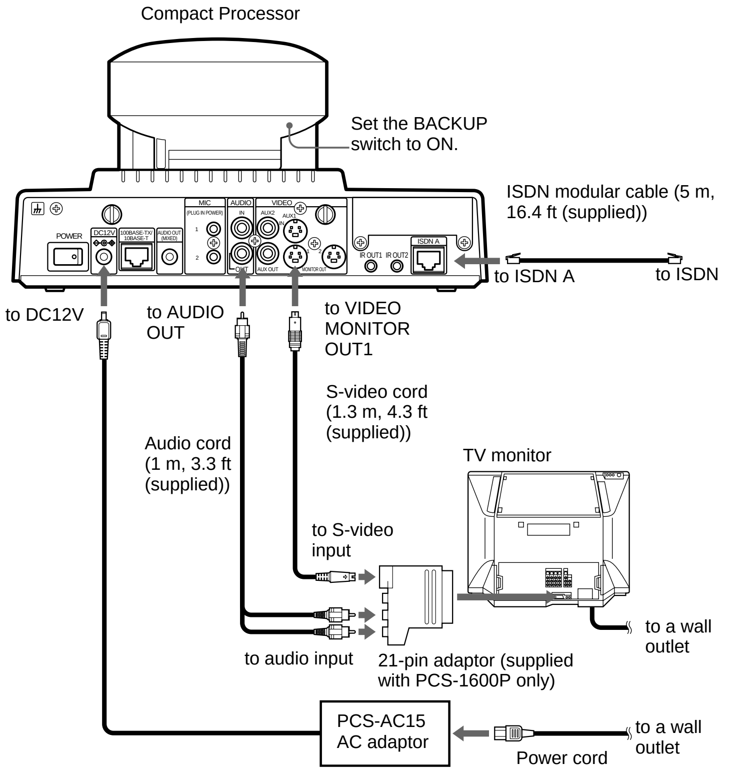
Unit	Description
PCS-I160 BRI Board	Provides two ISDN jacks. The connection with 6B channels is available.
PCS-I161 V.35 Board	Provides the V.35 connector. The connection via the V.35 interface is available.
PCS-K32 V.35 Conversion Connector Cable	Connects one end to the V.35 connector (on the PCS-I161 V.35 Board) and the other end to the terminal adaptor. (1 m, 3.3 ft)
PCS-K60 S-video cord	Connects one end to the S-video jack on the video equipment and the other end to the Compact Processor.
PCS-UC160 Upgrade Kit	Allows you to use this unit as the MCU (Multipoint Control Unit).
PCS-UC161 Upgrade Kit	Allows you to hold a meeting on the LAN that corresponds to H.323.

Basic System Connection

Connect the TV monitor and the AC adaptor to the Compact Processor, and connect to the ISDN line with the supplied ISDN modular cable.
The following cables; the ISDN modular cable and the audio cord, each cable is equipped with the color label. When connecting these cables, match the label color with the color of the connector name printed on the rear panel.

Notes

- Be sure to turn off all the equipment before making any connections.
- If your TV has the 21-pin connector, use the supplied 21-pin adaptor. (PCS-1600P only)

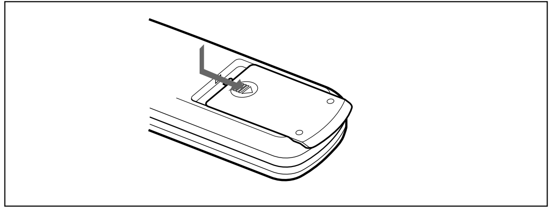

Compact Processor
Set the BACKUP switch to ON.
ISDN modular cable (5 m, 16.4 ft (supplied))
POWER
DC12V
100BASE-TX/ 10BASE-T
AUDIO OUT (MIXED)
MIC
(PLUG IN POWER)
1
2
AUDIO
IN
OUT
VIDEO
AUX2
AUX1
IN
AUX OUT
MONITOR OUT
1
2
IR OUT1
IR OUT2
ISDN A
to ISDN A
to ISDN
to DC12V
to AUDIO OUT
to VIDEO MONITOR OUT1
S-video cord (1.3 m, 4.3 ft (supplied))
Audio cord (1 m, 3.3 ft (supplied))
TV monitor
to S-video input
to audio input
21-pin adaptor (supplied with PCS-1600P only)
to a wall outlet
PCS-AC15 AC adaptor
Power cord
to a wall outlet

Preparing the System

Inserting Batteries into the Remote Commander

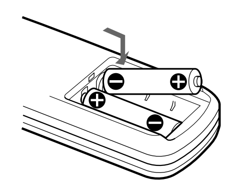
The supplied Remote Commander controls most of the functions. This section describes how to insert batteries into the Remote Commander.

1 Remove the battery compartment cover.



2 Insert two size AA (LR6) alkaline batteries (supplied) with correct ⊕ and ⊖ polarity into the battery compartment.

When inserting the batteries, be sure to put the negative end at first.



Caution

Be sure to place the negative ⊖ end of the battery at first. If you place the positive ⊕ end at first, there is a possibility of damaging the insulated film covering the battery and creating a short circuit.

3 Replace the cover.

Battery life

When the Remote Commander no longer functions properly, replace both the batteries.

Notes on batteries

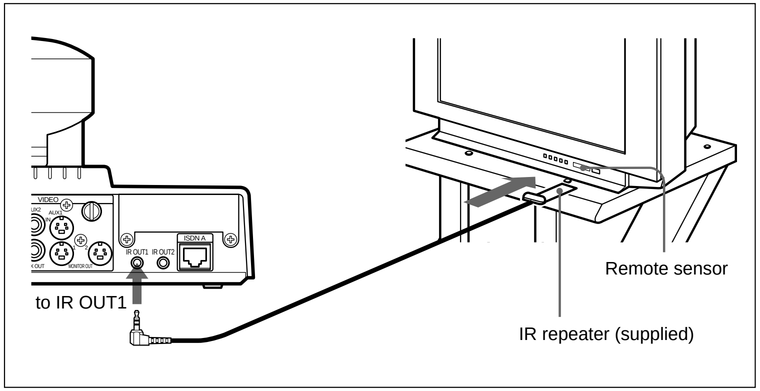
To avoid possible damage from battery leakage or corrosion, observe the following:

- Be sure to insert the batteries in the correct direction.
- Do not mix old and new batteries, or different types of batteries.
- Do not attempt to charge dry-cell batteries.
- If you do not intend to use the Remote Commander for a long time, remove the batteries.
  If battery leakage occurs, clean the battery compartment and replace all the batteries.

Preparing the TV Monitor

Insert the IR repeater below the remote sensor of the TV monitor. Once you set the IR repeater, you can turn on the Compact Processor and a Sony TV monitor together by pressing the I/⏻ button on the Remote Commander.
If the IR repeater does not function properly, set Monitor Mode in the General Setup menu to MODE2 (PCS-1600); to MODE4 (PCS-1600P).

For details on the Monitor Mode setting, see "General Setup menu" on page 98.



When using a Sony TV monitor

The TV monitor can be operated from the Remote Commander.

For details on operating the Remote Commander, see "To operate a Sony TV monitor" on page 136.

To adjust the TV monitor screen

Use the controls on the TV monitor to adjust the screen (picture, hue, contrast, brightness, and sharpness).

For details on adjusting the screen, refer to the operating instructions supplied with the TV monitor.

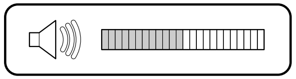
Note

Do not activate the surround function of the TV monitor. This causes strange sounds since the echo canceler on the Compact Processor will not function properly.

Setting the Initial Volume Level on the TV

When you adjust the volume, use the VOLUME/DOC-BRIGHT +/– buttons on the Remote Commander.

1. Set the volume level to the middle position by pressing the VOLUME/DOC-BRIGHT +/– buttons on the Remote Commander.



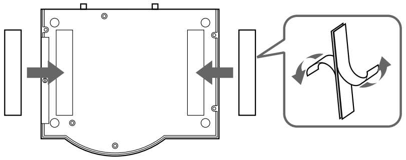
2. Adjust the volume with the TV monitor's control.

   Set it to the proper level for listening to a remote party.

Installing the Compact Processor

When you install the Compact Processor, use the supplied Velcro. This will prevent the Compact Processor from falling down.

1 Stick one side of the supplied Velcro to the bottom of the Compact Processor.



2 Stick the other side of the Velcro to the top of the TV monitor.

3 Attach the Compact Processor and the TV monitor by securing the Velcro.

Turning the System On/Off

This section describes how to turn on and off the Compact Processor.

Note

Set the CONF/DOC/TV selector on the Remote Commander to “CONF” when operating the Compact Processor.

Turning On

The following describes how to turn on the Compact Processor.

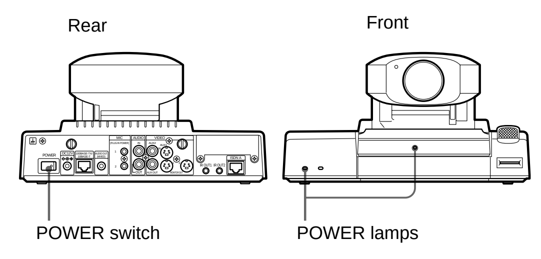
1 Make sure the TV monitor is on standby.

For details on how to set the TV monitor into a standby state, refer to the operating instructions supplied with the TV monitor.

2 Turn on the power of any other equipment to be used during the meeting.

3 Set the POWER switch on the rear of the Compact Processor to on.

Soon, the Compact Processor and the TV monitor are turned on.
The POWER lamps (green) on the camera and the Compact Processor light up, and the self-diagnostic starts.
The picture shot by the local camera appears on the monitor screen after the self-diagnostic is completed.



Turning the System On/Off

Note

After the power is turned on, the camera performs training movements. Be sure not to catch your finger.

Sleep function

The Compact Processor is turned into sleep mode to save power, if you do not operate the Compact Processor for about 1 to 99 minutes.
The POWER lamp on the main unit flashes while in sleep mode.
Once a call comes in, the sleep function is automatically released.

To release the sleep function

Press any of the buttons on the Remote Commander.

To set the time that the unit turns into sleep mode

Set the time by setting Sleep Time in the General Setup menu.
If you do not want to use the sleep function, set Sleep Mode to Off.

For details on the Sleep Time and Sleep Mode settings, see "General Setup menu" on page 98.

Notes

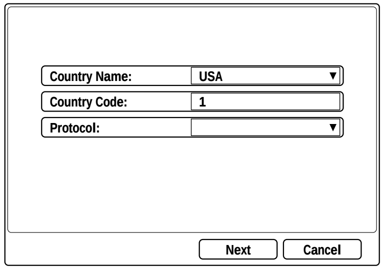
- The POWER lamp on the camera does not flash even if the system is in sleep mode.
- A Sony TV monitor is turned into standby mode.

When the Compact Processor is turned on for the first time

The setup wizard appears on the monitor screen after the self-diagnostic is completed.
Register your local system data following the wizard.

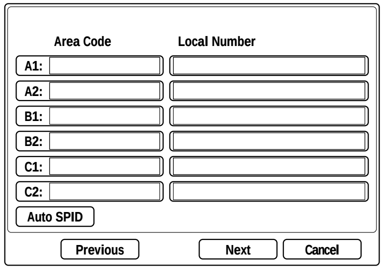
1 Set up the following items.

Country Name: Selects your country.
Country Code: Enters your country code in the box. (e.g., enter "1" for the USA.)
Protocol: Selects the nework switch type. (This is only for the USA and Canada.)


Country Name: USA
Country Code: 1
Protocol:

2 Select Next with the joystick on the Remote Commander, then press the joystick.

The next wizard appears on the monitor screen.



3 Set up the following items.

Area Code: Enters your area code.Do not enter the first zero number of your area code. (e.g., enter only "408" for California.)
Local Number: Enters your telephone number and sub-address (if you set your sub-address). Enter the asterisk (✱) after the telephone number, then enter the sub-address. You cannot use the alphabet in a sub-address.

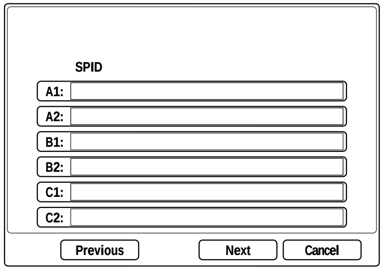
(Continued)

When you select Auto SPID
You can automaically set up the Area Code, Local Number on this page, and SPID items on the next page.

Notes
- "Auto SPID" is only for the USA and Canada.
- Register information in the boxes B1 to C2 if you have installed the optional PCS-I160 BRI Board.

4 Select Next with the joystick on the Remote Commander, then press the joystick.

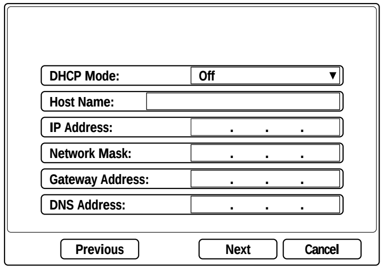
The next wizard appears on the monitor screen. (This is only for the USA and Canada.)



For details on the SPID registration, see "SPID Registration for Customers in the USA" on page 81.

5 Select Next with the joystick on the Remote Commander, then press the joystick.

The next wizard appears on the monitor screen.



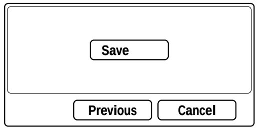
DHCP Mode: Off

6 Set up the following items.

DHCP Mode: Sets up the DHCP (Dynamic Host Configuration Protocol).
Auto: Automatically gets your IP address and network mask. Check your IP address on the Machine Information menu after you get them.
Off: Sets DHCP to OFF. When set to OFF, enter your IP address and network mask.
Host Name: Enter your host name.
IP Address: Enter your IP address.
Network Mask: Enter your network mask.
Gateway Address: Enter your default gateway address.
DNS Address: Enter your DNS (Domain Name System) server address.

7 Select Next with the joystick on the Remote Commander, then press the joystick.

The message for verification appears.



8 Select Save with the joystick on the Remote Commander, then press the joystick.

The setting is saved.

To cancel the setup

Select Cancel with the joystick on the Remote Commander, then press the joystick. Or press the RETURN button on the Remote Commander.

To go back to the previous wizard

Select Previous with the joystick on the Remote Commander, then press the joystick.

Setting the System (Compact Conference Package) to be on Standby

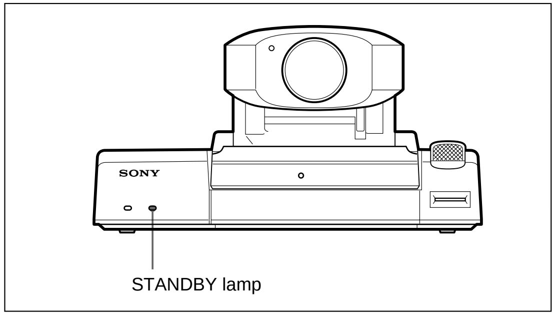
When the system is on standby, you can turn the system on with the I/⏻ button on the Remote Commander.

1 Press the I/⏻ button on the Remote Commander.

The indication “Power off?” appears on the monitor screen.

2 Select OK with the joystick on the Remote Commander, then press the joystick. Or press the I/⏻ button on the Remote Commander.

Both the Compact Processor and the TV monitor are turned into standby.
The STANDBY lamp (orange) lights up.



To cancel turning into standby
Select Cancel using the joystick on the Remote Commander in step **2**, then press the joystick.

Note
Do not turn off the POWER switch on the rear panel while the menu is displayed on the monitor screen.

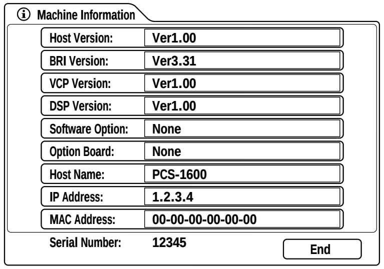
On the Help Menu

Press the HELP button on the Remote Commander, the help menu appears on the monitor screen.

On the Version And Option Indications

You can check the Compact Processor version and the option installed into the unit, with the Machine Information menu.

For details on the Machine Information menu, see “Machine Information menu” on page 104.



Machine Information

Host Version: Ver1.00
BRI Version: Ver3.31
VCP Version: Ver1.00
DSP Version: Ver1.00
Software Option: None
Option Board: None
Host Name: PCS-1600
IP Address: 1.2.3.4
MAC Address: 00-00-00-00-00-00
Serial Number: 12345

Machine Information menu

Turning the System On/Off

Turning Off

The following describes how to turn off the Compact Processor.

1. Set the POWER switch on the rear of the Compact Processor to off.
2. Turn off the power of any other equipment to be used during the meeting.

Notes

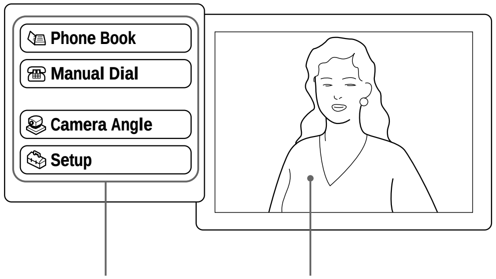
- If you are not going to use the system for an extended period, set the POWER switch to off.
- You cannot receive any calls from remote parties if the POWER switch is set to off.

How to Operate the Menu

The different menu is opened whether the system is in communication or not.

Switching the Menu Not in Communication

The following launcher menu is always displayed when the system is not in communication. Select the desired menu with the joystick on the Remote Commander, then press the joystick. The desired menu will be opened.



Select these buttons with the joystick to access the desired menu.

The picture shot by the local camera appears.

Phone Book menu
This is used to hold a meeting with a registered party or to register or modify a party. (Pressing the PHONE BOOK button on the Remote Commander accesses the Phone Book menu directly.)

For details on the Phone Book menu, see pages 39 to 41, 71 to 77.

Manual Dial menu
This is used to hold a meeting with an unregistered party.

For details on the Manual Dial menu, see pages 36 to 39.

Camera Angle menu

This is used to control the angle and zoom of the camera. (Pressing the CAMERA button on the Remote Commander accesses the Camera Angle menu directly.)

For details on the Camera Angle menu, see page 50.

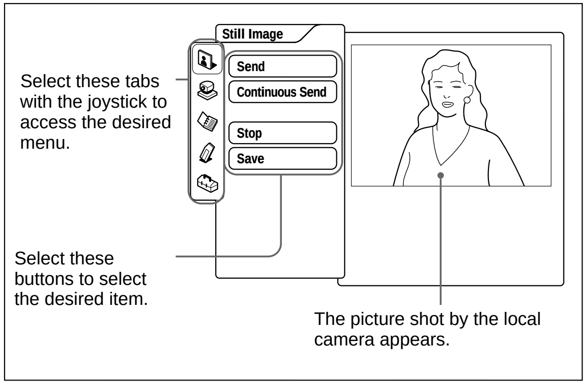
Setup menu

This is used to register or modify the setup of the system.

For details on the Setup menu, see pages 78 to 104.

Switching the Menu in Communication

Press the MENU button on the Remote Commander in communication, the Still Image menu is opened. Select the desired menu with the joystick on the Remote Commander, then press the joystick. The desired menu will be opened.



Select these tabs with the joystick to access the desired menu.

Select these buttons to select the desired item.

The picture shot by the local camera appears.

Still Image menu

This is used to control a still image. (Pressing the STILL IMAGE button on the Remote Commander accesses the Still Image menu directly.)

For details on the Still Image menu, see pages 61 to 64.

Camera menu

This is used to control the camera. (Pressing the CAMERA button on the Remote Commander accesses the Camera menu directly.)

For details on the Camera menu, see pages 49 to 55.

Phone Book menu

This is used to hold a meeting with a registered party or to register or modify a party. (Pressing the PHONE BOOK button on the Remote Commander accesses the Phone Book menu directly.)

For details on the Phone Book menu, see pages 39 to 41, 71 to 77.

Setup menu

This is used to register or modify the setup of the system.

For details on the Setup menu, see pages 78 to 104.

Memory Stick menu

This is used to use a “Memory Stick.” You can access this menu only when the “Memory Stick” is inserted.

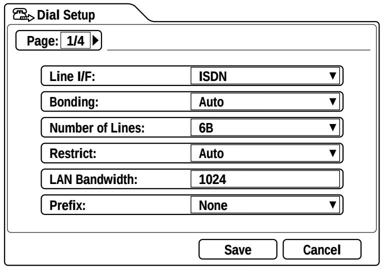
For details on the Memory Stick menu, see pages 58 and 59.

http://getMANUAL.com

Operating the Menu

This describes the basic menu operation, taking the Dial Setup menu as an example.

1 Open the Dial Setup menu from the Setup menu (page 29).



Dial Setup

Page: 1/4

Line I/F: ISDN

Bonding: Auto

Number of Lines: 6B

Restrict: Auto

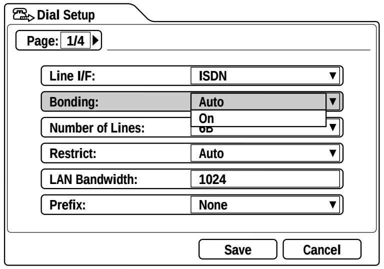
LAN Bandwidth: 1024

Prefix: None

Save Cancel

2 Select the desired item with the joystick on the Remote Commander, then press the joystick.

The settings of the selected item is pulled down.



Dial Setup

Page: 1/4

Line I/F: ISDN

Bonding: Auto / On

Number of Lines: 6B

Restrict: Auto

LAN Bandwidth: 1024

Prefix: None

Save Cancel

3 Select the desired setting with the joystick on the Remote Commander moved up or down, then press the joystick.

4 Select Save with the Remote Commander, then press the joystick.

The modification is complete.

To page up or down the menu

Select Page with the joystick on the Remote Commander, then move the joystick to the right or left.

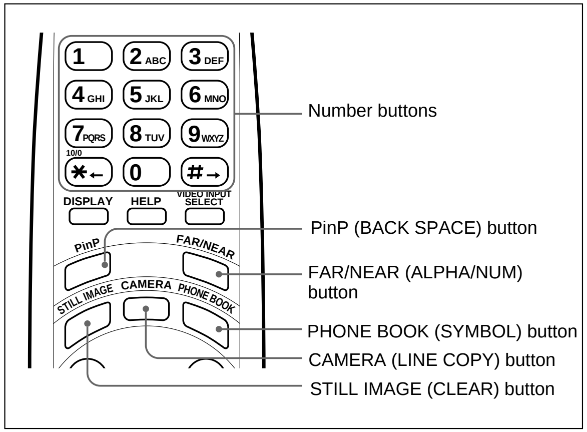
To return to the previous level hierarchy of the menu

Press the RETURN button on the Remote Commander.

Turning Off the Indicators

Press the DISPLAY button on the Remote Commander to turn off the indicators. To turn on the indicators, press it again.

Entering Characters


1
2 ABC
3 DEF
4 GHI
5 JKL
6 MNO
7 PQRS
8 TUV
9 WXYZ
10/0
✱←
0
#→
DISPLAY
HELP
VIDEO INPUT SELECT
PinP
FAR/NEAR
STILL IMAGE
CAMERA
PHONE BOOK
Number buttons
PinP (BACK SPACE) button
FAR/NEAR (ALPHA/NUM) button
PHONE BOOK (SYMBOL) button
CAMERA (LINE COPY) button
STILL IMAGE (CLEAR) button

To switch the input mode

Press the FAR/NEAR (ALPHA/NUM) button on the Remote Commander repeatedly to switch the input mode.

To enter characters

Press the number buttons on the Remote Commander to enter the desired character. Each time you press the button, the character is input from among the alphabets on each button, or the numbers on each.
To enter special characters (symbols), press the PHONE BOOK (SYMBOL) button repeatedly to select a desired character.

To copy the number

Press the CAMERA (LINE COPY) button on the Remote Commander. The number in the box above is copied to the next box.

To delete a character

Press the PinP (BACK SPACE) button on the Remote Commander. The last entered character is deleted.

To delete all characters in a box

Move the cursor to the box where you want to delete the entry, then press the STILL IMAGE (CLEAR) button on the Remote Commander.

Chapter 2

Basic Operation During a Meeting

Calling a Remote Party

You can start a meeting with a remote party by dialing. Once you have made a connection with the remote party, you can begin talking just like normal phone call.
The following describes how to call a remote party.

You have to register your local system data and set up the Compact Processor before starting a meeting.

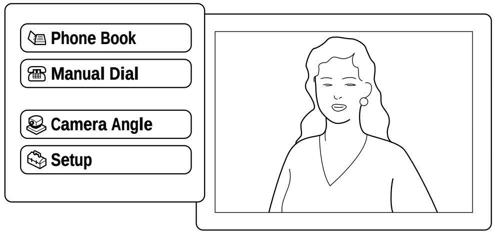
For details on registration and setup, see Chapter 4 "Registration and Setup."

Notes

- Meetings using the V.35 interface are available when the optional PCS-I161 V.35 board has been installed.
- Meetings on a LAN are available when the system has been upgraded with the optional PCS-UC161 Upgrade Kit.

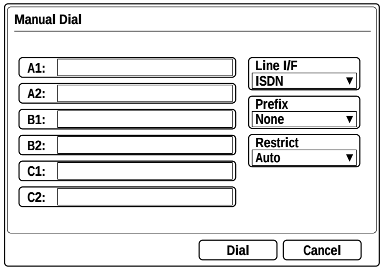
Calling an Unregistered Remote Party

The following launcher menu is always displayed on the monitor screen not in communication.



1 Select Manual Dial with the joystick on the Remote Commander, then press the joystick. Or press the CONNECT/DISCONNECT (☎/☎) button on the Remote Commander.

The Manual Dial menu appears on the monitor screen.



Line I/F: ISDN
Prefix: None
Restrict: Auto

Note

The B1 to C2 boxes are only displayed when you have installed the optional PCS-I160 BRI Board.

2 **When connecting via the ISDN lines**

Enter the telephone number of the remote party to have a meeting with in the A1 and A2 boxes.

When connecting on a LAN

Enter the IP address (or the host name and domain name) of the remote party to have a meeting with in the IP Address box.

Move the joystick up or down to select the box, then enter the telephone number or IP address with the number buttons on the Remote Commander.

- To delete a telephone number or IP address, press the STILL IMAGE (CLEAR) button on the Remote Commander. The number or IP address entered is deleted.
- To copy a telephone number, press the CAMERA (LINE COPY) button. The number entered are copied to the next box.
- To delete the last number, press the PinP (BACK SPACE) button on the Remote Commander. The last number is deleted.

Note

Do not enter your prefix number in these boxes. The prefix number will be set in step **4**.

3 Set up the line interface.

Select Line I/F with the joystick on the Remote Commander, then press the joystick. Select the desired setting with the joystick moved up or down, then press the joystick.

ISDN: Connects to a TV conferencing system via the normal ISDN line.
Telephone: Connects to a phone to have a voice meeting via the normal ISDN line.
V.35: Connects to a TV conferencing system via the V.35 interface. (Option)
LAN: Connects to a TV conferencing system using a LAN. (Option)

(Continued)

4 Select the prefix setting.

Select Prefix with the joystick on the Remote Commander, then press the joystick. Select the desired setting with the joystick moved up or down, then press the joystick.

None: Does not use the prefix number.
Prefix-A: Uses the setting A set in the Dial Setup menu.
Prefix-B: Uses the setting B set in the Dial Setup menu.
Prefix-C: Uses the setting C set in the Dial Setup menu.

For details on the setting up the prefix number, see "Dial Setup menu" on page 89.

5 Select the ISDN transfer rate.

Select Restrict with the joystick on the Remote Commander, then press the joystick. Select the desired setting with the joystick moved up or down, then press the joystick.

Auto: Connects to a remote party with a normal ISDN line.
56K: Connects to a region or country with a 56 Kbps ISDN transfer rate.

Note

When using the Compact Processor as an MCU, or holding a meeting on a LAN, the Restrict item cannot be set.

6 Select Dial with the joystick on the Remote Commander, then press the joystick. Or press the CONNECT/DISCONNECT (☎/☎) button on the Remote Commander.

The system dials the number that is input in step **2**, and the indication "Dialing (The line interface is indicated.)" appears on the monitor screen.
When the connection is completed, the indication "MEETING STARTS!" appears on the monitor screen.

To cancel dialing before the connection is completed

Select Cancel with the joystick on the Remote Commander, then press the joystick. Or press the CONNECT/DISCONNECT (☎/☎) button on the Remote Commander.

To set up other items than the items above

When More Options Enable is set to On in the Dial Setup menu, the More Options button is displayed at the lower part of the menu. Select More Options with the joystick on the Remote Commander, then press the joystick. The Dial Setup menu appears and you can set up the other items.

Last-number redial function

When you access the Manual Dial menu again after you have used the Manual Dial menu once, the last number dialed is entered into the boxes.

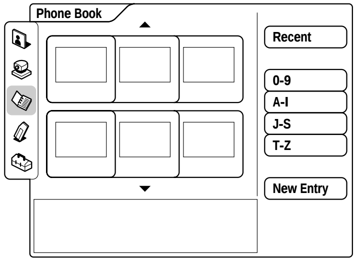
Notes

This function does not work in the following situations:
- Once you turned off the power or turned the Compact Processor to standby/sleep.
- You have not dialed though you entered a number.

Calling a Registered Remote Party

1 Press the PHONE BOOK button on the Remote Commander.

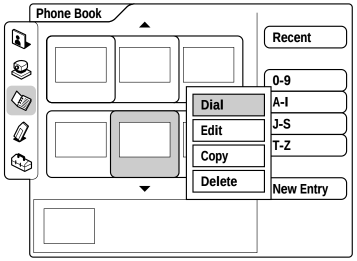
The Phone Book menu appears on the monitor screen.



(Continued)

2 Select the remote party with the joystick on the Remote Commander, then press the joystick.

The sub-menu is opened on the monitor screen.



You can sort the list on the Phone Book menu.

For details, see "To sort the list on the Phone Book menu" on page 41.

3 Select Dial with the joystick on the Remote Commander, then press the joystick. Or press the CONNECT/ DISCONNECT (☎/☎) button on the Remote Commander.

The system dials the selected remote party in step **2**, and the indication "Dialing (The line interface is indicated.)" appears on the monitor screen.
When the connection is completed, the indication "MEETING STARTS!" appears on the monitor screen.

To cancel dialing before the call is connected

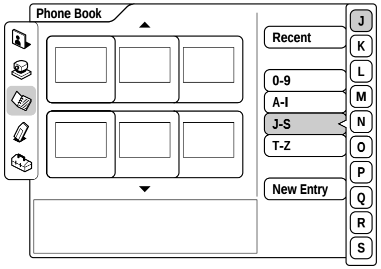
Select Cancel with the joystick on the Remote Commander, then press the joystick. Or press the CONNECT/ DISCONNECT (☎/☎) button on the Remote Commander.

To sort the list on the Phone Book menu

You can sort the list on the Phone Book menu.

The list on the Phone Book menu will be sorted by selecting the buttons at the right on the menu.

When you select Recent, most recently dialed six indexes are displayed.
When you select 0–9, A–I, J–S, or T–Z, and select the desired letter, six indexes which start from the specified letter are displayed.



Receiving a Call

When a call comes in, the connection process with differs depending on the setting of the answer mode.

Auto answer mode
The system automatically receives the call and starts the meeting. However, even if you are not ready to start the meeting, the local picture will be displayed on the remote party's monitor screen.

Manual answer mode
Incoming calls are not automatically connected. You must manually connect the call.
You can start the meeting whenever you are ready.

Notes

- The POWER switch of the Compact Processor must be set to on to receive a call.
- Make sure that the TV monitor is on standby.

Setting the Answer Mode

When you select the auto answer mode, set Auto Answer to On in the Answer Setup menu. When you select the manual answer mode, set it to Off.

For details on the Auto Answer item, see "Answer Setup menu" on page 94.

Answering Calls in Auto Answer Mode

The system automatically receives a call when it is on standby or in sleep mode.

When a call comes in, the Compact Processor starts ringing, and the indication "Incoming Call" appears on the monitor screen.
Once the connection has been made, the remote party appears on the local monitor screen, and the local party appears on the remote screen. You are now ready to hold your meeting.
The indication "MEETING STARTS!" appears on the monitor screen.

Answering Calls in Manual Answer Mode

When your system is in manual answer mode, you need to connect incoming calls manually.
When a call comes in, the Compact Processor starts ringing, and the indication "Incoming Call. Respond?" appears on the monitor screen.

Select OK with the joystick on the Remote Commander, then press the joystick. Or press the CONNECT/DISCONNECT (☎/☎) button on the Remote Commander.

Once the connection has been made, the remote party appears on the local monitor screen, and local party appears on the remote screen. You are now ready to hold your meeting.
The indication "MEETING STARTS!" appears on the monitor screen.

If you do not want to receive a call
Select Cancel with the joystick, then press the joystick. Or press the CONNECT/DISCONNECT (☎/☎) button on the Remote Commander. The Compact Processor stops ringing.

If you are operating the system when a call comes in

The indication "Incoming Call. Respond?" appears on the monitor screen. If you receive the call, Select OK with the joystick on the Remote Commander, then press the joystick. If you cannot receive the call according to your current operations, Select Cancel with the joystick on the Remote Commander, then press the joystick.

When the system fails to make a connection

The indication "CANNOT COMPLETE CONNECTION" appears along with an ISDN cause code and a message on the monitor screen.

For details on ISDN cause codes and messages, see "On Screen Messages" on page 137.

Receiving a Call

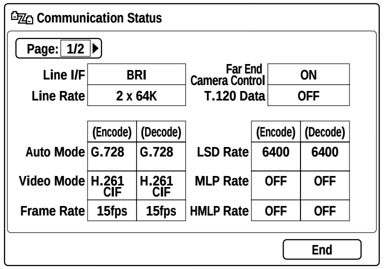
When the optional PCS-UC161 Upgrade Kit has been installed

If a call comes in via the ISDN line during the meeting on a LAN, the Compact Processor is busy.

Checking the Connection Status

During a meeting, you can check the status of the communication. Elapsed time also appears on the monitor screen during a meeting.

1 Open the Communication Status menu.



Line I/F	BRI	Far End Camera Control	ON
Line Rate	2 x 64K	T.120 Data	OFF

	(Encode)	(Decode)		(Encode)	(Decode)
Auto Mode	G.728	G.728	LSD Rate	6400	6400
Video Mode	H.261 CIF	H.261 CIF	MLP Rate	OFF	OFF
Frame Rate	15fps	15fps	HMLP Rate	OFF	OFF

2 Check the status:

Line I/F: Displays the line interface being used.
Line Rate: Displays the number of lines and the transfer rate being used.
Far End Camera Control: Displays the far end camera control protocol.
T.120 Data: Displays the data transmission protocol.

The items below are separately displayed in the columns Encode and Decode.
The columns Encode indicate the status being sent, the columns Decode indicate the status being received.

Audio Mode: Displays the audio encoding system.
Video Mode: Displays the video encoding system.
Frame Rate: Displays the maximum frame rate of the motion picture.
LSD Rate: Displays the LSD (Low Speed Data) rate.
MLP Rate: Displays the MLP (Multi Layer Protocol) rate.
HMLP Rate: Displays the HMLP (High speed Multi Layer Protocol) rate.

To close the Communication Status menu
Select End with the joystick on the Remote Commander, then press the joystick. The menu returns to the Setup menu.

On elapsed time

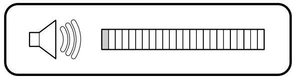
When you set Time Display to On in the General Setup menu, the elapsed time appears on the monitor screen during a meeting. You can use it as a guide, and it is convenient for checking communication costs. If you do not need to display the elapsed time, set Time Display to Off.

For details on the Time Display setting, see "General Setup menu" on page 98.

Adjusting the Sound

Adjusting the Volume

You can adjust the volume sent from remote parties.
Press the VOLUME/DOC-BRIGHT + button to increase the volume; the VOLUME/DOC-BRIGHT – button to decrease it.
The volume bar appears on the monitor screen.
After awhile, the bar automatically disappears if you do not operate.



Notes

- You have to set the volume of the TV monitor at first.
- If feedback occurs, decrease the volume.

Muting Local Conversations – Mute Function

You can mute local conversations.
If you press the MIC/DOC-DARK button, local conversations will not be sent to the remote party.
When local conversations are muted, the mute indication MIC OFF is displayed on the monitor screen.

To cancel muting
Press the MIC/DOC-DARK button on the Remote Commander again.
The mute indication MIC OFF disappears from the monitor screen.

Synchronizing Voice and Motion – Lip Synchronization

During the meeting, voice and motion may lose synchronization.
The automatic lip synchronization function built into the system solves this problem by closely synchronizing audio and video before they are transmitted to the remote party.

Adjusting the Sound

When you use the lip synchronization, set Lip Sync to On in the Audio Setup menu. When you do not use the lip synchronization, set it to Off.

For details on the Lip Sync setting, see “Audio Setup menu” on page 97.

Note

The lip synchronization function only works for your own party. To activate the lip synchronization function at the remote party, you must ask them to do so.

On the Echo canceler

The Compact Processor is equipped with the echo canceler. When you use the built-in echo canceler, set Echo Canceler to Internal in the Audio Setup menu; when not in use, set to Off. If you use an echo canceler of external audio equipment connected to the system, set Echo Canceler to External. It should normally be set to On.

For details on the Echo Canceler setting, see “Audio Setup menu” on page 97.

Adjusting the Camera

You can adjust the local camera to obtain the best viewing results.
During communication, you can also adjust the remote camera, and adjust images being sent from the remote camera.

Notes

- A malfunction may occur if the local and remote parties try to adjust the same camera at the same time.
- You cannot control the remote camera during a meeting if H.281 is not selected as the far end camera control protocol.
- You cannot control the remote camera during a meeting if the Compact Processor is used as the MCU.
- If you adjust the camera angle during a meeting, a motor noise may picked up by the microphone, and it may be heard through a speaker. This is not a malfunction.
  If you frequently adjust the camera, we recommend you to use the optional PCS-A300 Microphone. After connecting the PCS-A300 Microphone, the built-in microphone does not function.

  For details on the setting when using the PCS-A300 Microphone, see “Audio Setup menu” on page 97.

To display the picture on the whole screen

When you adjust the camera, press the PinP button on the Remote Commander. The picture will be displayed on the whole screen. To return to the previous screen, press the joystick, the RETURN button, or the PinP button on the Remote Commander.

To select the camera to be adjusted

Before adjusting the camera, you must select the local or remote camera to be controlled.

Press the FAR/NEAR button on the Remote Commander.

When the remote camera is selected, the indication FAR appears on the monitor screen.
When the local camera is selected, the indication FAR does not appear on the monitor screen.

Note

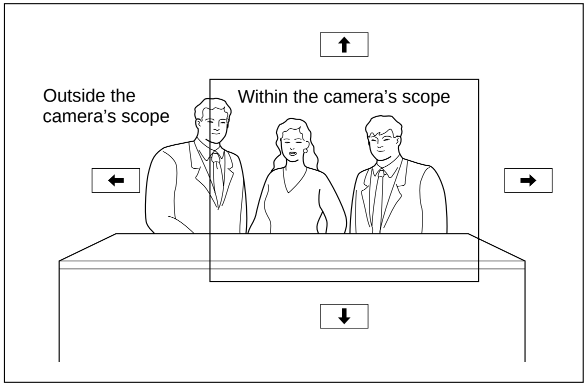
You cannot control the remote camera if you do not set Far End Camera Control to On in the Dial Setup menu at the local, and set Far End Camera Control to Off in the Answer Setup menu at the remote.

Adjusting the Camera Angle and Zoom

You can adjust the camera angle and zoom.

To adjust the camera angle

Move the joystick on the Remote Commander up, down, to the left, or to the right to view any areas not currently covered by the camera. (Select Camera Angle from the launcher menu to open the Camera Angle menu when the system is not in communication.)



To adjust zoom

Press the ZOOM/TV-CH T button on the Remote Commander to zoom in or the ZOOM/TV-CH W button to zoom out. Adjust zoom to display the desired picture.

Adjusting Focus and Brightness

Focus and brightness are automatically adjusted.
We recommend you not to use the manual adjustments since the camera automatically adjust itself for the best focus and brightness.

Select Adjustment with the joystick on the Remote Commander in the Camera menu, then press the joystick. The guidance will appear and you can adjust the focus and brightness.

To adjust focus manually

Press the PHONE BOOK button on the Remote Commander, the focus adjustment setting changes to the automatic adjustment.

Press the STILL IMAGE button on the Remote Commander repeatedly to move the focus point closer to the camera.
Press the CAMERA button on the Remote Commander repeatedly to move the focus point further away to the camera.

To adjust brightness

Press the VOLUME/DOC-BRIGHT+ button on the Remote Commander repeatedly to make the picture brighter.
Press the VOLUME/DOC-BRIGHT – button on the Remote Commander repeatedly to make the picture darker.

To shoot with the backlight function

When you shoot a subject with the light source behind the subject, use the backlight function.

Each time you press the MIC/DOC-DARK button, the backlight function is switched between on and off.

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Presetting Angle and Zoom Settings

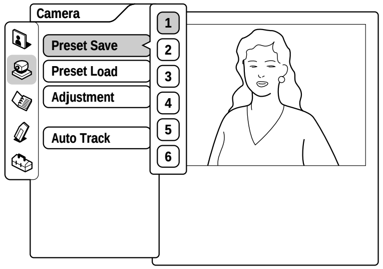
You can store the camera settings in memory up to six, and each preset has the angle and zoom settings.
Once a setting has been stored, you can easily recall a setting from the six presets.

To store a setting

1 Open the Camera menu.

2 Select Preset Save with the joystick on the Remote Commander, then press the joystick.

3 Select the preset number which you want to store the setting with the joystick on the Remote Commander, then press the joystick.



4 Set up the angle and zoom.

For details on the angle and zoom settings, see “Adjusting the Camera Angle and Zoom” on page 50.

5 Select Preset Save with the joystick on the Remote Commander, then press the joystick.

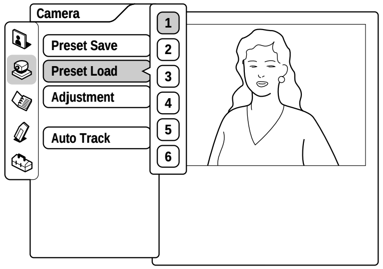
The setting will be stored under the selected number.

To recall a preset

1 Select Preset Load with the joystick on the Remote Commander, then press the joystick.

2 Select the number button (1 to 6) with the joystick on the Remote Commander, then press the joystick.

The camera is automatically adjusted by the preset under the selected number.



On backup
The memories of the preset are erased when the POWER switch on the Compact Processor is set to off. To retain those memories, set the BACKUP switch at the rear of the camera to ON.

Notes

- In the camera, the built-in lithium battery acts as the power source for retaining the memories and is kept charged as long as the system is used. If the system is used for shorter period of time with the BACKUP switch set to ON, however, the battery is gradually discharged. Besides if you do not use the system at all for almost 12 weeks, the battery is completely discharged. To retain the memories of the settings, you should recharge the battery.
- To recharge the battery, connect the camera to the Compact Processor and leave it for approximate 48 hours with the POWER switch set to on.

Tracking a Subject Automatically — Automatic Target Tracking Function

You can have the camera memorize a particular color or brightness so that automatically tracks a subject having the memorized color or brightness.
If a subject almost goes off the screen, the camera performs the pan/tilt action so that the subject is placed back in the middle of the screen.

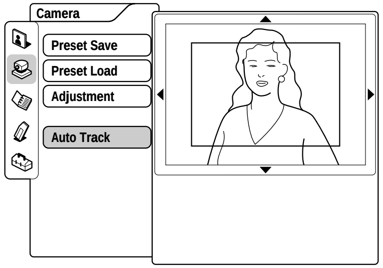
Note

The automatic target tracking function is only available for the local camera.

1 Open the Camera menu.

2 Select Auto Track with the joystick on the Remote Commander, then press the joystick.

The frame appear on the monitor screen.



3 Use the joystick and the ZOOM/TV-CH buttons on the Remote Commander to place a subject into the frame.

Notes

- Be sure to place the subject so that the portion uniform in brightness and color is in the frame.
- The camera might not recognize a subject if the portion different from the subject in brightness and color, such as the backdrop, is placed together in the frame.

4 Press the joystick on the Remote Commander.

The indication ❂ appears on the monitor screen.
The automatic target tracking function starts and the frame disappears from the monitor screen.

To cancel the automatic target tracking function

Select Auto Track Cancel with the joystick on the Remote Commander, then press the joystick.
The indication ❂ disappears from the monitor screen.

If the frame is repeatedly extended to the full screen

The camera does not recognize the subject. Repeat steps **2** to **4** again.

If the lamp at the side of the lens lights up

The camera is not capturing the memorized subject correctly. In this case, perform the pan/tilt operation so that the subject comes into the screen. Or have the subject memorized onto the camera again.

Note

When the frame does not track the subject, repeat steps **2** and **4** until the frame starts tracking the subject while adjusting the lighting and the portion of the subject so that the color and brightness of the subject is optimized.

Selecting the Picture and Sound

You can select the picture and sound from both the local and remote sites equipment.

To switch the picture

To switch the picture displayed on the monitor from the local or remote picture

Press the FAR/NEAR button on the Remote Commander, then switch the picture by selecting the icons on the monitor screen with the joystick on the Remote Commander.

Each time you press the button, the picture on the monitor screen switches between the local and the remote.

To switch the video that will be sent to the remote sites

Press the VIDEO INPUT SELECT buttons on the Remote Commander to switch the picture on the screen.

Main: The main camera is selected.
Object: The optional PCS-DS150/DS150P Document Stand is selected.
AUX1: The equipment connected to the VIDEO IN AUX 1 jack is selected.
AUX2: The equipment connected to the VIDEO IN AUX 2 jack is selected.

To switch the sound

Set Input Select in the Audio Setup menu as follows:
MIC: The microphone is selected.
AUX: The external equipment is selected.
MIC + AUX: Both the microphone and the external equipment are selected.

For details on the Input Select item, see "Audio Setup menu" on page 97.

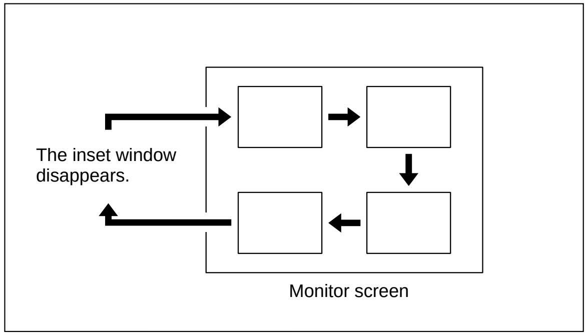
Note

The audio input of the remote cannot be switched from the local system.

Monitoring Yourself in the Inset Window

The inset window allows you to monitor your own party while viewing the remote party. **(Picture-in-picture function)**

Press the PinP button on the Remote Commander in communication.
If an inset window is not displayed, the inset window appears on the monitor screen.
When it is already displayed, each time you press the PinP button, the inset window moves as follows:



Notes

- The inset window is displayed at the same position as it was displayed last. If the inset window is not displayed last, it is not displayed.
- The inset window does not appear when your system is not connected to a remote party.

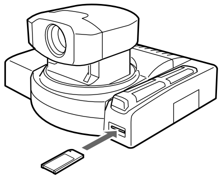
Displaying a Still Picture

You can use still pictures stored in a “Memory Stick.”

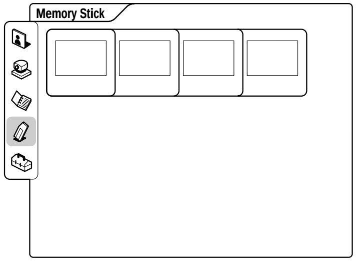
Displaying a Still Picture Stored in the “Memory Stick”

1 Insert the “Memory Stick” into the Memory Stick slot.

Insert it in the arrow mark direction with the mark faced upward.



2 Open the Memory Stick menu.



3 Select the desired still picture with the joystick on the Remote Commander, then press the joystick.

The sub-menu is opened.

4 Select Load with the joystick on the Remote Commander, then press the joystick.

The menu disappears from the monitor screen and the selected still picture is displayed.

If an unformatted “Memory Stick” is inserted
The message “Format a Memory Stick?” will appear. When you format the “Memory Stick,” select OK. When you do not format it, select Cancel.

To eject the “Memory Stick”

Push the “Memory Stick” inward, then release your finger. The “Memory Stick” comes out a little.

Notes on a “Memory Stick”

On file names
The file will be stored under the directory “¥DCIM¥100MSDCF” and its file name format is as follows: “DSCXXXXX.JPG”.

The usable file format of the still picture
The usable file format is up to the XGA (1024 × 768) size JPEG format (Data capacity is up to 512 KB).

The compression format
The Compact Processor compresses the data in the JPEG format. The file extension is “.jpg”.

A “Memory Stick” formatted by a computer
A “Memory Stick” formatted by a computer does not have a guaranteed compatibility with the Compact Processor. Format the “Memory Stick” using a digital still camera or the Compact Processor.

To format a “Memory Stick”
Select MS Format with the joystick on the Remote Commander in the Memory Stick menu, then select OK. The “Memory Stick” will be formatted. However, the still pictures and Phone Book list stored in the “Memory Stick” will be also deleted.

“Memory Stick” and are trademarks of Sony Corporation.

Clearing the Still Picture From the Screen

Open the Still Image menu, and select Stop with the joystick on the Remote Commander, then press the joystick.

Sending Still Pictures

When you send pictures that contain lots of text, we recommend you to send that picture as a still picture. Since still pictures are more clear than moving pictures for reading text.
You can send a video as a still picture of external equipment connected to the the Compact Processor, or of the camera.
You can also send pictures continuously.

To display the still picture on the whole screen
When you display the still picture on the whole screen, press the PinP button on the Remote Commander. The still picture will be displayed on the whole screen. To return to the previous screen, press the joystick, the RETURN button, or the PinP button on the Remote Commander.

Sending One Still Picture

1. Open the Still Image menu.
2. Set up the angle and zoom if you readjust them.

   For details on the angle and zoom settings, see “Adjusting the Camera Angle and Zoom” on page 50.
3. Select Send with the joystick on the Remote Commander, then press the joystick.

   The moving picture on the monitor screen is frozen, and the still picture is sent. After the transmission, the message “Transmission of the still picture is completed” appears.

To clear the still picture from the screen
Select Stop with the joystick on the Remote Commander, then press the joystick.

Sending Still Pictures Continuously

1 Open the Still Image menu.

2 Set up the angle and zoom if you readjust them.

For details on the angle and zoom settings, see “Adjusting the Camera Angle and Zoom” on page 50.

3 Select Continuous Send with the joystick on the Remote Commander, then press the joystick.

The moving picture on the monitor screen is frozen, and the still picture is continuously sent.

To cancel sending still pictures

Select Stop with the joystick on the Remote Commander, then press the joystick.

Note

The interval that takes to send the next still picture depends on the transfer rate.

Sending a Still Picture Stored in the “Memory Stick”

1 Open the Memory Stick menu.

2 Select the desired still picture with the joystick on the Remote Commander, then press the joystick.

The sub-menu is opened.

3 Select Send with the joystick on the Remote Commander, then press the joystick.

The selected still picture is displayed and it is sent. After the transmission, the message “Transmission of the still picture is completed” appears.

Note

Create the directory “¥DCIM¥100MSDCF” for the “Memory Stick,” and store the file under that directory. The file format must be as follows: “NNNnnnnn.JPG” (N = alphabet, n = number).

Clearing the Still Picture From the Screen

Open the Still Image menu, and select Stop with the joystick on the Remote Commander, then press the joystick.

Saving a Still Picture Into the “Memory Stick”

1 Display the still picture to be stored.

2 Insert the “Memory Stick” into the Memory Stick slot.

3 Open the Still Image menu.

4 Select Save with the joystick on the Remote Commander, then press the joystick.

The selected still picture is stored into the “Memory Stick.”

Note

Do not remove the “Memory Stick” until the data is stored. The “Memory Stick” may be broken, or the Compact Processor may malfunction.

When the write-protect tab on the “Memory Stick” is set to LOCK

The message appears, and you cannot store a still picture into the “Memory Stick.”

When the capacity of the “Memory Stick” is full

The message appears, and you cannot store a still picture into the “Memory Stick.”

When an unformatted “Memory Stick” is inserted

The message “Format a Memory Stick?” appears When you format the “Memory Stick,” select OK, when you do not format it, select Cancel.

Note

A file is saved as a new file.

Sending the Dial Tone to the Remote Party

You can send the dial tone (Dual Tone Multi Frequency) assigned to the 0 – 9, #, and * buttons on the Remote Commander to control the remote system.

1 Press the * button on the Remote Commander.

The DTMF screen appears on the monitor screen.

2 Press one of the number buttons (0 – 9, #, and *) that will be sent to the remote system.

3 Press the joystick on the Remote Commander.

The DTMF screen disappears from the monitor screen, and the dial tone will be sent to the remote system.

Ending a Meeting

Press the CONNECT/DISCONNECT (☎/☎) button on the Remote Commander.
The message appears on the monitor screen.

To disconnect the call

Select OK with the joystick on the Remote Commander, then press the joystick. Or press the CONNECT/DISCONNECT (☎/☎) button on the Remote Commander again.

Note

The Compact Processor remains on even if the connection is broken.

To continue your meeting

Select Cancel with the joystick on the Remote Commander, then press the joystick.

Chapter 3

Advanced Operation

Connecting With an MCU

You can perform a multiple communication with making a connection to an MCU (Multipoint Control Unit).
Once you connect with the MCU that has the chair control function, the chair control is activated among 99 terminals.

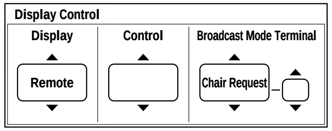
Note

When you have upgraded the system using the optional PCS-UC161 Upgrade Kit and using a LAN, the chair control is deactivated.

1 Connect to an MCU.

2 Press the FAR/NEAR button on the Remote Commander.

The Display Control menu appears on the monitor screen.



Broadcast Mode: Selects the broadcast mode.
Terminal: Selects the terminal number from 1 to 99.

(Continued)

3 Select Chair Request from Broadcast Mode with the joystick on the Remote Commander.

Note

When you do an incapable operation, the indication "Command is rejected by MCU" appears on the monitor screen.

To see a picture of the selected terminal

1 Select Receive from Broadcast Mode with the joystick on the Remote Commander.

2 Select the terminal number wih the joystick moved up or down, then press the joystick.

The picture of the selected terminal appears on the local monitor.

Note

When you have not selected the terminal number, a terminal which has the lowest number is first selected.

To broadcast a picture of the selected terminal to all the terminals

1 Select Broadcast from Broadcast Mode with the joystick on the Remote Commander.

2 Select the terminal number with the joystick moved up or down, then press the joystick.

A picture of the selected terminal appears on your monitor and it is broadcast to all terminals.

To broadcast a picture of your terminal to all the terminals

1 Select MCU with the joystick on the Remote Commander, then press the joystick.

2 Select Self Broadcast wih the joystick moved up or down, then press the joystick.

A picture on your monitor is broadcast to all the terminals. The indication ▦ appears on the monitor screen when you broadcast.

To end the chair control

Press the FAR/NEAR button on the Remote Commander. Select Release from Broadcast Mode with the joystick on the Remote Commander, then press the joystick.

Voice Meeting

The system can connect to a normal phone to hold a meeting using the sound only. **(Voice Meeting)**
The basic procedure is same as one with images and sound.

Note

When you have upgraded the system using the optional PCS-UC161 Upgrade Kit and using a LAN, you cannot do the voice meeting.

To start a voice meeting with unregistered remote parties

Set Line I/F to Telephone in the Manual Dial menu.

For details on the setting, see “Calling an Unregistered Remote Party” on page 36.

The indication “VOICE ONLY” appears on the monitor screen, and the local picture is displayed on the local monitor screen.

To register remote parties for holding a voice meeting

Set Line I/F to Telephone in the List Edit menu.

For details on the registration, see “Calling a Registered Remote Party” on page 39.

To set the audio protocol

Set up the Telephone item in the Dial Setup menu.
When you call, set Telephone to Auto. This automatically sets to G.711 μ-law (NTSC); to G.711 A-law (PAL).
When you receive, the audio protocol setting is not required.

For details on the setup, see “Dial Setup menu” on page 89.

Chapter 4

Registration and Setup

Registering a Remote Party

You can register a remote party before making the connection.
You can register up to 500 remote parties.

Notes

- Register the information in the boxes B1 to C2 when you have installed the optional PCS-I160 BRI Board to use three ISDN lines.
- Meetings on a LAN are only available when the system has been upgraded with the optional PCS-UC161 Upgrade Kit.

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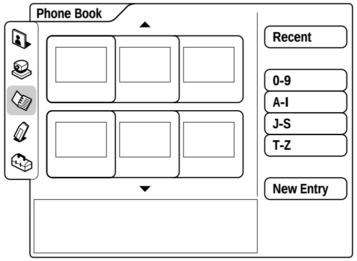
Registering a Remote Party

Making an Entry

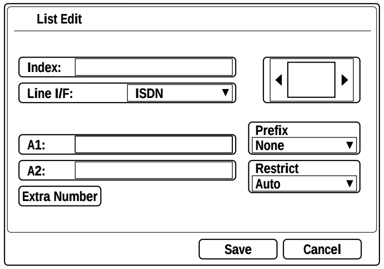
1 Press the PHONE BOOK button on the Remote Commander.

The Phone Book menu appears on the monitor screen.



2 Select New Entry with the joystick on the Remote Commander, then press the joystick.

The List Edit menu appears on the monitor screen.



Line I/F: ISDN

Prefix: None

Restrict: Auto

3 Register the name of the remote party into the Index box.

For details on how to input, see “Entering Characters” on page 33.

4 Set up the line interface.

ISDN: Connects to a TV conferencing system via the normal ISDN line.
Telephone: Connects to a phone to have a voice meeting via the normal ISDN line.
V.35: Connects to a TV conferencing system via the V.35 interface. (Option)
LAN: Connects to a TV conferencing system using a LAN. (Option)

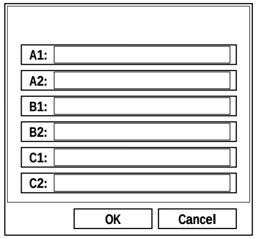
5 **When selecting other than LAN in step 4**

Enter the telephone number and the sub-address for the remote party (if the remote party set a sub-address) in the A1 and A2 boxes.

If the remote party has multiple telephone numbers, enter the first number in the A1 box and the second number in the A2 box.
Enter the asterisk (✱) after the telephone number, then enter the sub-address. You cannot use the alphabet in a sub-address.

When you connect with more than 2B channels

You have to set up the boxes B1 to C2. Select Extra Number with the joystick on the Remote Commander, then press the joystick. The following menu is opened. Register the telephone numbers and the sub-address (if the remote party set a sub-address) into the boxes B1 to C2.



When selecting LAN in step 4

Enter the IP address (or the host name and domain name) of the remote party.

(Continued)

6 Select the line interface icons or still images stored in the "Memory Stick."

Move the joystick to the left or right to select the icon or still image, then press the joystick.

Note

If the "Memory Stick" which has still images is not inserted, you cannot select still images.

7 Select the prefix number setting.

None: Does not use the prefix number.
Prefix-A: Uses the setting A set in the Dial Setup menu.
Prefix-B: Uses the setting B set in the Dial Setup menu.
Prefix-C: Uses the setting C set in the Dial Setup menu.

For details on setting the prefix number, see "Dial Setup menu" on page 89.

8 Select the ISDN transfer rate.

Auto: Connects to a remote party with a normal ISDN line.
56K: Connects to a region or country with a 56 Kbps ISDN transfer rate.

9 Select Save with the joystick on the Remote Commander, then press the joystick.

The message "Save list?" appears.

10 Select OK with the joystick on the Remote Commander, then press the joystick.

The registration is complete.

Notes

- When using the Compact Processor as the MCU, item below cannot be set up:
  Restrict.
- When using a LAN, item below cannot be set up:
  Restrict.

To set up other items than the items above

When More Options Enable is set to On in the Dial Setup menu, the More Options button is displayed at the lower part of the menu. Select More Options with the joystick on the Remote Commander, then press the joystick. The Dial Setup menu appears and you can set up the other items.

Modifying an Entry

You can modify the name and telephone numbers of an entry.

1 Select the Index title to be modified with the joystick, then press the joystick.

2 Select Edit with the joystick on the Remote Commander, then press the joystick.

The List Edit menu appears.

3 Modify the entry.

4 Select Save with the joystick on the Remote Commander, then press the joystick.

The entry is modified.

Deleting Registered Entries

You can delete a registered entry as follows.

1 Select the Index title to be deleted with the joystick on the Remote Commander.

2 Select Delete with the joystick on the Remote Commander, then press the joystick.

The indication “Delete list?” appears on the monitor screen.

3 Select OK with the joystick on the Remote Commander, then press the joystick.

The selected Index entry is deleted.

To cancel deleting

Select Cancel with the joystick on the Remote Commander in step **3**, then press the joystick.

Duplicating the Setting of the Phone Book Menu

1 Select the index to be copied with the joystick on the Remote Commander, then press the joystick.

2 Select Copy with the joystick on the Remote Commander, then press the joystick.

The index is duplicated, and “XXXX-2” appears in the Index box. Since the setting has been duplicated, you can use it with a little modification.

Notes on Registration

General note

If the Restrict setting of the remote party is set to 56K in the Answer Setup menu, the connection will be made at 56 Kbps even if you set Restrict to Auto in the Dial Setup menu.

Note on the optional PCS-I160 BRI Board

If you have installed the optional PCS-I160 BRI Board, you can use three ISDN lines (up to 6B channels). In this case, register second telephone number in the B1 and B2 boxes, and third telephone number in the C1 and C2 boxes.

Note on the optional PCS-I161 V.35 Board

If the optional PCS-I161 V.35 Board has been installed, and connect to a private line or a terminal adaptor via the V.35 interface, select V.35 in Line I/F, and enter as follows:

- When not using RS-366, set V.35 RS-366 to Off in the Dial Setup menu. Do not enter the telephone numbers.
- When using RS-366, set V.35 RS-366 to On in the Dial Setup menu. Enter the telephone numbers.
- You do not need to set up Restrict.

To change the ISDN transfer rate temporarily

The Compact Processor is set to 64 Kbps for an ISDN line at factory. However, some countries (e.g., the USA) or regions may have 64 Kbps and 56 Kbps ISDN transfer rates. If the remote party has set its transfer rate to 56 Kbps, you need to set your system to 56 Kbps to communicate with that system. Before making a call to such a party, set Restrict to 56K in the Dial Setup menu.

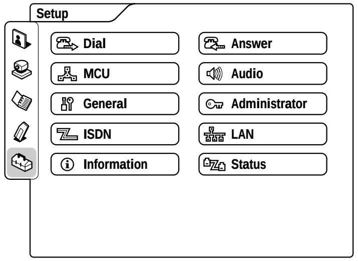
Registering Local Information

Before holding a meeting, you will need to register your local information on the ISDN Setup menu, such as the local directory number.

Setting Up the ISDN Setup Menu

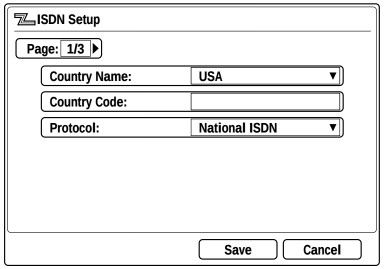
1 Select Setup with the joystick on the Remote Commander in the launcher menu, then press the joystick.

The Setup menu appears on the monitor screen.


Setup
Dial
Answer
MCU
Audio
General
Administrator
ISDN
LAN
Information
Status

2 Select ISDN with the joystick on the Remote Commander, then press the joystick.

The ISDN Setup menu (Page 1) appears on the monitor screen.


ISDN Setup
Page: 1/3
Save
Cancel

Country Name: USA

Country Code:

Protocol: National ISDN

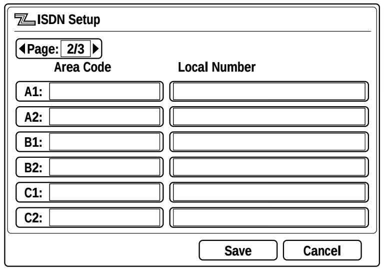
3 Select your country with the joystick, then press the joystick.

4 Enter your country code in the Country Code box.

(e.g., enter “1” for the USA.)

5 Select Page 1/3 with the joystick on the Remote Commander, then move the joystick to the right.

The ISDN Setup menu (Page 2) appears on the monitor screen.


ISDN Setup
Page: 2/3
Area Code
Local Number
A1:
A2:
B1:
B2:
C1:
C2:
Save
Cancel

6 Enter your area code in the Area Code boxes A1 and A2.

Do not enter the first zero number of your area code.
(e.g., enter only “408” for California.)

Note

Register information in the boxes B1 to C2 if you have installed the optional PCS-I160 BRI Board.

7 Enter your telephone number and sub-address (if you set your sub-address) in the Local Number boxes A1 and A2.

Enter the asterisk (∗) after the telephone number, then enter the sub-address. You cannot use the alphabet in a sub-address.

8 Select Page 2/3 with the joystick on the Remote Commander, then move the joystick to the right.

The ISDN Setup (SPID) menu (Page 3) appears on the monitor screen. (This is only for the USA and Canada.)

(Continued)

9 Set up the ISDN Setup (SPID) menu. (This is only for the USA.)

For details on the SPID registration, see “SPID Registration for Customers in the USA” on page 81.

10 Select Save with the joystick on the Remote Commander, then press the joystick.

The message for verification appears.

11 Select OK with the joystick on the Remote Commander, then press the joystick.

The setting is saved.

To cancel the setup

Select Cancel with the joystick on the Remote Commander, then press the joystick. Or press the RETURN button on the Remote Commander.

To page up or down the menu

Select Page with the joystick on the Remote Commander, then move the joystick to the right or left.

SPID Registration for Customers in the USA

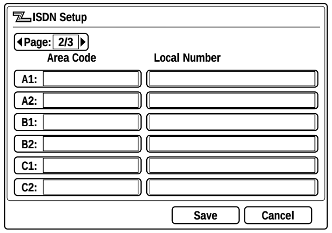
If the system is connected to a network switch of the following types, you can use ISDN lines.

- **Network switch type:** AT&T 5ESS
  Network switch software version: 5E8 or later (for National ISDN-1 and National ISDN-2)
- **Network switch type:** Northern Telecom (NTI) DMS-100
  Network switch software version: BCS34 or later (for National ISDN-1 and National ISDN-2)
- **Network switch type:** AT&T 5ESS
  Network switch software version: 5E8 or later (for Multipoint or Point-to-Point Custom ISDN)
- **Network switch type:** Northern Telecom (NTI) DMS-100
  Network switch software version: BCS34 or later (for Custom ISDN)

In these cases, you shall register the LDN (Local Directory Number: seven-digit local phone number).

Follow the steps below to register the LDN(s).

1 Open the ISDN Setup menu (Page 1).



(Continued)

2 Enter your country code in the Country Code box.

If the network switch type is AT&T 5ESS (National ISDN) or NTI DMS-100 (National ISDN)
Country Code is “1”
If the network switch type is AT&T 5ESS (Multipoint Custom ISDN)
Country Code is “1✱10”
If the network switch type is AT&T 5ESS (Point-to-Point Custom ISDN)
Country Code is “1✱12”
If the network switch type is NTI DMS-100 (Custom ISDN)
Country Code is “1✱11”

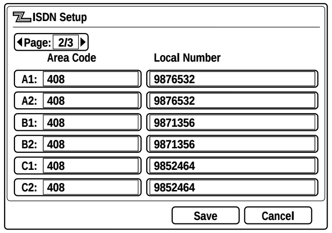
3 Open the ISDN Setup menu (Page 2).

4 Enter your LDN (s) and sub-address in the Local Number boxes.

If one ISDN line is used, register the LDN in the boxes A1 and A2.
If two ISDN lines are used, register the LDNs in the boxes A1, A2, B1, B2.
If three ISDN lines are used, register the LDNs in the boxes A1, A2, B1, B2, C1, C2.

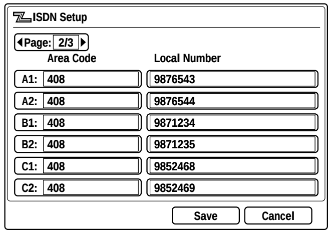
If the network switch type is AT&T 5ESS (National ISDN)
Each LDN is given for three channels (CH A1 and A2, CH B1 and B2, CH C1 and C2)
or
Each LDN is different as a separate LDN is given for each channel.

The following shows the use of three ISDN lines for AT&T 5ESS (National ISDN).
In case of each LDN is given for two channels.



	Area Code	Local Number
A1:	408	9876532
A2:	408	9876532
B1:	408	9871356
B2:	408	9871356
C1:	408	9852464
C2:	408	9852464

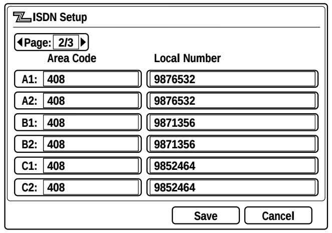
In case of each LDN is different as a separate LDN is given for each channel.



	Area Code	Local Number
A1:	408	9876543
A2:	408	9876544
B1:	408	9871234
B2:	408	9871235
C1:	408	9852468
C2:	408	9852469

If the network switch type is AT&T 5ESS (Multipoint or Point-to-Point Custom ISDN)
Each LDN is given for three channels (CH A1 and A2, CH B1 and B2, CH C1 and C2).

The following shows the use of three ISDN lines for AT&T 5ESS (Multipoint Custom ISDN).

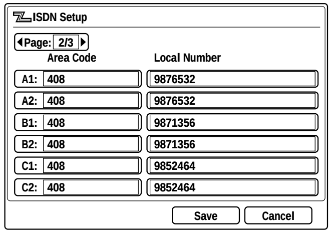


	Area Code	Local Number
A1:	408	9876532
A2:	408	9876532
B1:	408	9871356
B2:	408	9871356
C1:	408	9852464
C2:	408	9852464

(Continued)

SPID Registration for Customers in the USA

The following shows the use of three ISDN lines for AT&T 5ESS (Point-to-Point Custom ISDN).

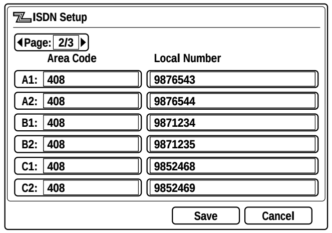

ISDN Setup

Page: 2/3

	Area Code	Local Number
A1:	408	9876532
A2:	408	9876532
B1:	408	9871356
B2:	408	9871356
C1:	408	9852464
C2:	408	9852464

If the network switch type is NTI DMS-100 (National ISDN or Custom ISDN)
Each LDN is different as a separate LDN is given for each channel.

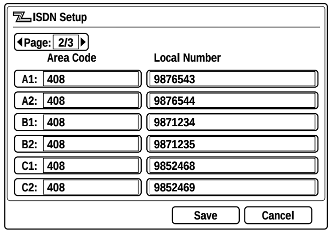
The following shows the use of three ISDN lines for NTI DMS-100 (National ISDN).


ISDN Setup

Page: 2/3

	Area Code	Local Number
A1:	408	9876543
A2:	408	9876544
B1:	408	9871234
B2:	408	9871235
C1:	408	9852468
C2:	408	9852469

The following shows the use of three ISDN lines for NTI DMS-100 (Custom ISDN).


ISDN Setup

Page: 2/3

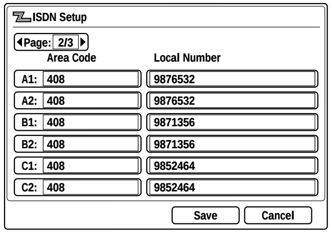
	Area Code	Local Number
A1:	408	9876543
A2:	408	9876544
B1:	408	9871234
B2:	408	9871235
C1:	408	9852468
C2:	408	9852469

---

5 Open the ISDN Setup (SPID) menu (Page 3).

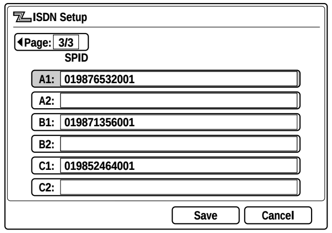
SPID in the ISDN Setup (SPID) menu and the Local Number in the ISDN Setup menu (Page 2) are entered in pairs and should not be crossed with BRI channels as each has its own LDN.
Be sure to enter each number in pairs. If it is crossed, you must correct the SPID-LDN pairs.

If the network switch type is AT&T 5ESS (National ISDN)
The following shows the use of three ISDN lines.
In case of each LDN is given for two channels.


ISDN Setup

Page: 2/3

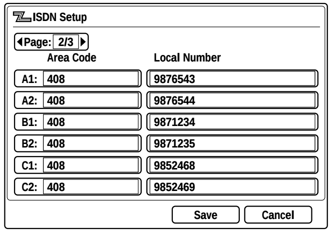
	Area Code	Local Number
A1:	408	9876532
A2:	408	9876532
B1:	408	9871356
B2:	408	9871356
C1:	408	9852464
C2:	408	9852464


ISDN Setup

Page: 3/3

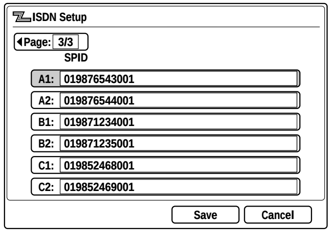
	SPID
A1:	019876532001
A2:	
B1:	019871356001
B2:	
C1:	019852464001
C2:	

In case of each LDN is different as a separate LDN is given for each channel.


ISDN Setup

Page: 2/3

	Area Code	Local Number
A1:	408	9876543
A2:	408	9876544
B1:	408	9871234
B2:	408	9871235
C1:	408	9852468
C2:	408	9852469


ISDN Setup

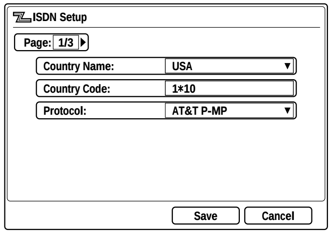
Page: 3/3

	SPID
A1:	019876543001
A2:	019876544001
B1:	019871234001
B2:	019871235001
C1:	019852468001
C2:	019852469001

(Continued)

SPID Registration for Customers in the USA

If the network switch type is AT&T 5ESS (Multipoint Custom ISDN)
The following shows the use of three ISDN lines.

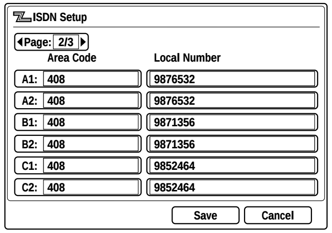

ISDN Setup
Save
Cancel

Page: 1/3

Country Name: USA

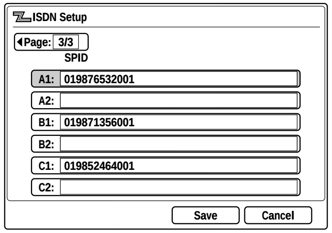
Country Code: 1*10

Protocol: AT&T P-MP


ISDN Setup
Save
Cancel

Page: 2/3

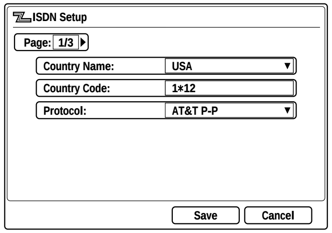
	Area Code	Local Number
A1:	408	9876532
A2:	408	9876532
B1:	408	9871356
B2:	408	9871356
C1:	408	9852464
C2:	408	9852464


ISDN Setup
Save
Cancel

Page: 3/3

	SPID
A1:	019876532001
A2:	
B1:	019871356001
B2:	
C1:	019852464001
C2:	

If the network switch type is AT&T 5ESS (Point-to-Point Custom ISDN)
You do not have to enter SPID.
The following shows the use of three ISDN lines.

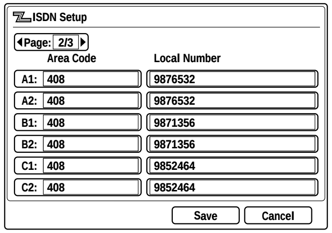

ISDN Setup
Save
Cancel

Page: 1/3

Country Name: USA

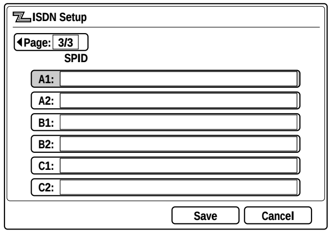
Country Code: 1*12

Protocol: AT&T P-P


ISDN Setup
Save
Cancel

Page: 2/3

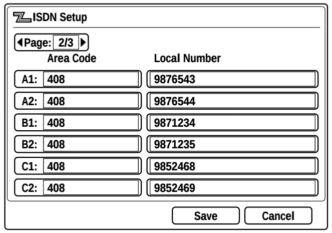
	Area Code	Local Number
A1:	408	9876532
A2:	408	9876532
B1:	408	9871356
B2:	408	9871356
C1:	408	9852464
C2:	408	9852464


ISDN Setup
Save
Cancel

Page: 3/3

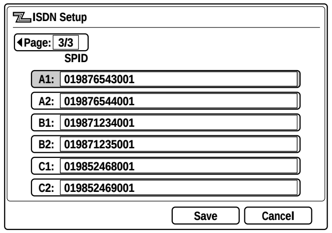
	SPID
A1:	
A2:	
B1:	
B2:	
C1:	
C2:	

If the network switch type is NTI DMS-100 (National ISDN)
The following shows the use of three ISDN lines.


ISDN Setup
Save
Cancel

Page: 2/3

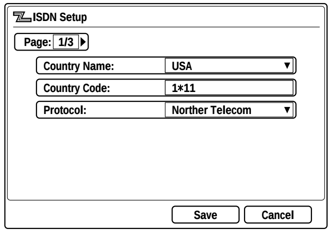
	Area Code	Local Number
A1:	408	9876543
A2:	408	9876544
B1:	408	9871234
B2:	408	9871235
C1:	408	9852468
C2:	408	9852469


ISDN Setup
Save
Cancel

Page: 3/3

	SPID
A1:	019876543001
A2:	019876544001
B1:	019871234001
B2:	019871235001
C1:	019852468001
C2:	019852469001

If the network switch type is NTI DMS-100 (Custom ISDN)
The following shows the use of three ISDN lines.


ISDN Setup
Save
Cancel

Page: 1/3

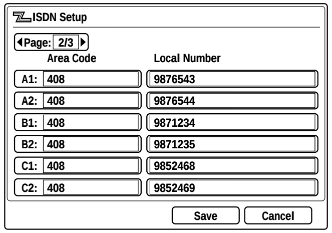
Country Name: USA

Country Code: 1*11

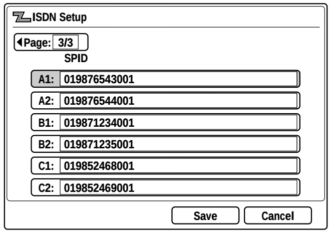
Protocol: Norther Telecom

(Continued)

SPID Registration for Customers in the USA



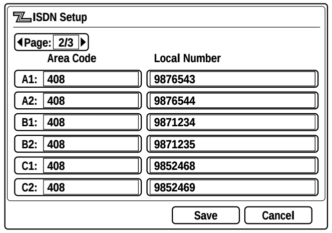
	Area Code	Local Number
A1:	408	9876543
A2:	408	9876544
B1:	408	9871234
B2:	408	9871235
C1:	408	9852468
C2:	408	9852469



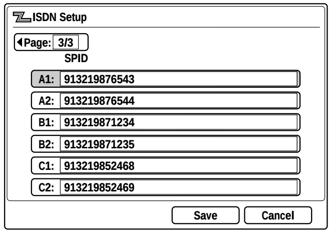
	SPID
A1:	019876543001
A2:	019876544001
B1:	019871234001
B2:	019871235001
C1:	019852468001
C2:	019852469001

You should let the remote party user know the contents of your LDN. The remote party dial list and the LDN should be kept in pairs.

The following shows a setup using three ISDN lines.



	Area Code	Local Number
A1:	408	9876543
A2:	408	9876544
B1:	408	9871234
B2:	408	9871235
C1:	408	9852468
C2:	408	9852469



	SPID
A1:	913219876543
A2:	913219876544
B1:	913219871234
B2:	913219871235
C1:	913219852468
C2:	913219852469

6 Select Save with the joystick on the Remote Commander, then press the joystick.

7 Select OK with the joystick on the Remote Commander, then press the joystick.

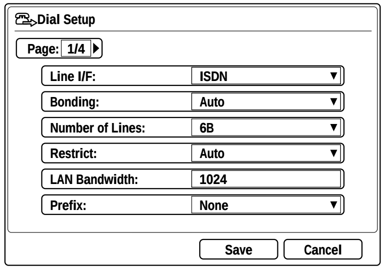
The registration is complete.

Menu Items in the Setup Menu

Dial Setup Menu

Sets up the attribute for calling.

Page 1



Line I/F:	ISDN
Bonding:	Auto
Number of Lines:	6B
Restrict:	Auto
LAN Bandwidth:	1024
Prefix:	None

Line I/F: Selects the line interface.
- **ISDN:** Connects to a TV conferencing system via the normal ISDN line.
- **Telephone:** Connects to a phone to have a voice meeting via the normal ISDN line.
- **V.35:** Connects to a TV conferencing system via the V.35 interface. (Option)
- **LAN:** Connects to a TV conferencing system using a LAN. (Option)

Bonding: Selects whether to use the Inverse Multiplexer interface or not.
"Bonding (Bandwidth on Demand Interoperability Group)" is a trademark of THE BONDING CONSORTIUM.
- **Auto:** Normally, select this setting.
- **On:** Connects to a remote party via the Inverse Multiplexer interface.

Number of Lines: Selects the number of lines usable for BONDING calling.
- **1B:** Connects via 1B channel.
- **2B:** Connects via 2B channels.
- **3B:** Connects via 3B channels.
- **4B:** Connects via 4B channels.
- **5B:** Connects via 5B channels.
- **6B:** Connects via 6B channels.

(Continued)

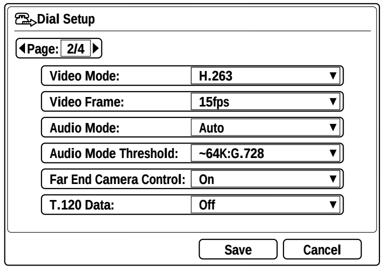
Restict: Selects the transfer rate via the ISDN line.
Auto: Normally, select this setting.
56K: Selects this setting when you call a region or country via the 56 Kbps transfer rate.

LAN Bandwidth: Sets up the bandwidth of a LAN. This item can be set between 1 and 1024K.

Prefix: Selects the prefix number setting from the following.
None: Does not use the prefix number.
Prefix-A: Uses the setting A set in the Dial Setup menu.
Prefix-B: Uses the setting B set in the Dial Setup menu.
Prefix-C: Uses the setting C set in the Dial Setup menu.

For details on setting the prefix, see page 92.

Page 2



Dial Setup
Page: 2/4
Video Mode: H.263
Video Frame: 15fps
Audio Mode: Auto
Audio Mode Threshold: ~64K:G.728
Far End Camera Control: On
T.120 Data: Off

Video Mode: Selects the protocol for the video encoding.
H.261: Sends pictures based on Recommendation H.261 (When sending pictures using Annex D).
H.263: Sends pictures based on Recommendation H.263.

Video Frame: Selects the number of frames.
15fps: Sends pictures at a maximum rate of 15 frames per second.
30fps: Sends pictures at a maximum rate of 30 frames per second.

Audio Mode: Selects the protocol for the audio encoding.
G.728: The audio bandwidth is narrow but the image quality is better. (G.728: 3.4 kHz)
G.722: The audio bandwidth is wider for better sound quality. (7 kHz)
G.711: Select this setting when the remote system does not support neither G.722 nor G.723.
Auto: Automatically selects the audio encoding according to the number of used lines.

Audio Mode Threshold: Selects the setup of the Auto setting of Audio Mode.
–64K:G.728: Sets the Auto setting of Audio Mode to G.728 when the used-line is 1B channel and sets to G.722 when it is 2B channels or more.
–128K:G.728: Sets the Auto setting of Audio Mode to G.728 when the used-line is 2B channels or less and sets to G.722 when it is 3B channels or more.
–192K:G.728: Sets the Auto setting of Audio Mode to G.728 when the used-line is 3B channels or less and sets to G.722 when it is 4B channels or more.

Far End Camera Control: Selects whether to control the far end camera or not.
On: Operates the far end camera.
Off: Does not operate the far end camera.

T.120 Data: Selects whether to have a T.120 data meeting.
On: Holds a T.120 data meeting.
Off: Does not hold a T.120 data meeting.

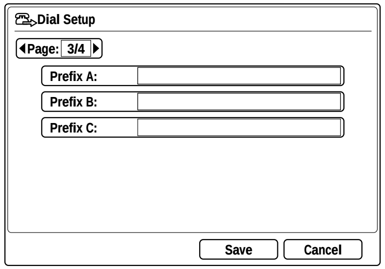
Notes

- When the optional V.35 Board is not installed, you cannot select V.35 from Line I/F.
- When the system is not upgraded using the optional PCS-UC161 Upgrade Kit, you cannot select LAN from Line I/F.

http://getMANUAL.com

Page 3

Enter “9” when you have to dial nine to reach an outside line.

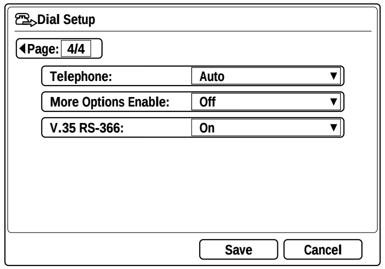


Prefix A: Sets up a prefix number that will be registered for Prefix-A in the Dial Setup menu.
Prefix B: Sets up a prefix number that will be registered for Prefix-B in the Dial Setup menu.
Prefix C: Sets up a prefix number that will be registered for Prefix-C in the Dial Setup menu.

Note

The number input in these boxes above is automatically dialed before the telephone number is dialed.

Page 4



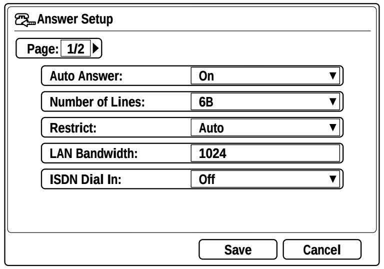
Telephone: Auto
More Options Enable: Off
V.35 RS-366: On

Telephone: Selects the audio protocol for the voice meeting.
Auto: Selects the protocol automatically.
G.711 µ-law: Selects the µ-law protocol.
G.711 A-law: Selects the A-law protocol.
More Options Enable: Selects whether to enable the dial attribute set in the Dial Setup menu for each dial list.
On: Enables the dial attribute for each dial list.
Off: Disables the dial attribute for each dial list.
V.35 RS-366: Selects whether to specify the telephone number when connecting via the V.35 interface.
On: When specifying the telephone number.
Off: When not specifying the telephone number.

Answer Setup Menu

Sets up the communication items for receiving.

Page 1



Answer Setup

Page: 1/2

Auto Answer: On

Number of Lines: 6B

Restrict: Auto

LAN Bandwidth: 1024

ISDN Dial In: Off

Auto Answer: Selects the answer mode.
- **On:** Answers calls in auto answer mode.
- **Off:** Answers calls in manual answer mode.

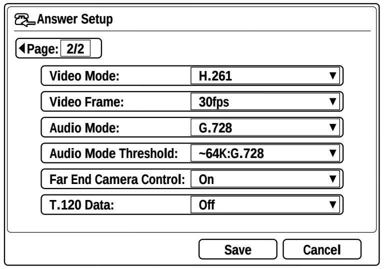
Number of Lines: Selects the number of lines usable for receiving.
- **1B:** Connects via 1B channel.
- **2B:** Connects via 2B channels.
- **3B:** Connects via 3B channels.
- **4B:** Connects via 4B channels.
- **5B:** Connects via 5B channels.
- **6B:** Connects via 6B channels.

Restrict: Selects the transfer rate via the ISDN line.
- **Auto:** Normally, select this setting.
- **56K:** Selects this setting when you call a region or country via the 56 Kbps transfer rate.

LAN Bandwidth: Sets up the bandwidth of a LAN. This item can be set between 1 and 1024K.

ISDN Dial In: Selects whether you are using the Multiple Subscriber Number.
- **On:** When you are using the Multiple Subscriber Number.
- **Off:** When you are not using the Multiple Subscriber Number.

Page 2



Answer Setup

Page: 2/2

Video Mode: H.261

Video Frame: 30fps

Audio Mode: G.728

Audio Mode Threshold: –64K:G.728

Far End Camera Control: On

T.120 Data: Off

Video Mode: Selects the protocol for the video encoding.
- **H.261:** Receives pictures based on Recommendation H.261.
- **H.263:** Receives pictures based on Recommendation H.263.

Video Frame: Selects the number of frames.
- **15fps:** Receives pictures at a maximum rate of 15 frames per second.
- **30fps:** Receives pictures at a maximum rate of 30 frames per second.

Audio Mode: Selects the protocol for the audio encoding.
- **G.728:** The audio bandwidth is narrow but the image quality is better. (G.728: 3.4 kHz)
- **G.722:** The audio bandwidth is wider for better sound quality. (7 kHz)
- **G.711:** Does not use G.722 and G.728.

Audio Mode Threshold: Selects the setup of the Auto setting of Audio Mode.
- **–64K:G.728:** Sets the Auto setting of Audio Mode to G.728 when the used-line is 1B channel and sets to G.722 when it is 2B channels or more.
- **–128K:G.728:** Sets the Auto setting of Audio Mode to G.728 when the used-line is 2B channels or less and sets to G.722 when it is 3B channels or more.
- **–192K:G.728:** Sets the Auto setting of Audio Mode to G.728 when the used-line is 3B channels or more and sets to G.722 when it is 4B channels or more.

Far End Camera Control: Selects whether the near end camera is controled or not.
- **On:** Operates the near end camera.
- **Off:** Does not operate the near end camera.

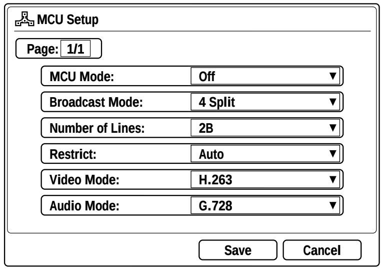
T.120 Data: Selects whether to have a T.120 data meeting.
- **On:** Holds a T.120 data meeting.
- **Off:** Does not hold a T.120 data meeting.

MCU Setup Menu

When you have upgraded the system using the optional PCS-UC160 Upgrade Kit and hold an MCU conference, set up the MCU Setup menu.

Note

The MCU Setup menu is displayed only when the system has been upgraded using the optional PCS-UC160 Upgrade Kit.



MCU Setup

Page: 1/1

MCU Mode: Off

Broadcast Mode: 4 Split

Number of Lines: 2B

Restrict: Auto

Video Mode: H.263

Audio Mode: G.728

MCU Mode: Set to On when holding a point to multi-point meeting.
- **On:** Holds a Point to multi-point meeting.
- **Off:** Holds a normal meeting.

Broadcast Mode: Selects the broadcast mode.
- **4 Split:** Displays each party on the four-split screen.
- **Voice:** Detects the terminal that speaks at the highest level among the connected terminals, and sends the picture to all the terminals.

Number of Lines: Selects the number of lines to be used.
- **1B:** Connects via 1B-channel.
- **2B:** Connects via 2B-channel.

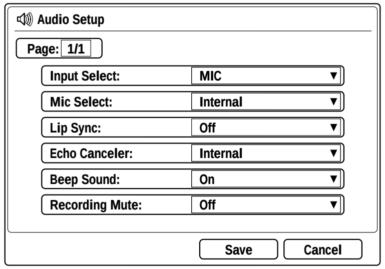
Restrict: Selects the transfer rate via the ISDN line.
- **Auto:** Connects to a remote party with a normal ISDN line.
- **56K:** Selects this setting when you call a region or country via the 56 Kbps transfer rate.

Video Mode: Selects the protocol for the video encoding.
- **H.261:** When connecting with the protocol based on H.261.
- **H.263:** When connecting with the protocol based on H.263.

Audio Mode: Selects the protocol for the audio encoding.
- **G.728:** The audio bandwidth is narrow but the image quality is better. (3.4 kHz)
- **G.722:** The audio bandwidth is wider for better sound quality. (7 kHz)
- **G.711:** When not using G.722 and G.728.

Audio Setup Menu

Sets up the audio system.



Audio Setup

Page: 1/1

Input Select: MIC

Mic Select: Internal

Lip Sync: Off

Echo Canceler: Internal

Beep Sound: On

Recording Mute: Off

Input Select: Selects the audio input.
- **MIC:** The microphone is selected.
- **AUX:** The external equipment is selected.
- **MIC+AUX:** Both the microphone and the external equipment are selected.

Mic Select: Selects the microphone to be used.
- **Internal:** Uses the built-in microphone.
- **External:** Uses the optional PCS-A300 Microphone (s).

Lip Sync: Selects whether you use the lip synchronization function.
- **On:** Activates the lip synchronization function.
- **Off:** Deactivates the lip synchronization function.

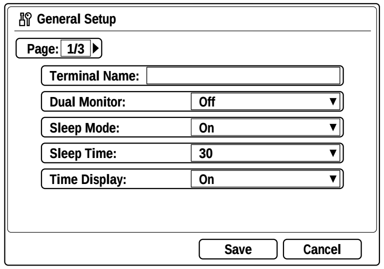
Echo Canceler: Selects whether you use the echo canceler inside the Compact Processor.
- **Internal:** Activates the built-in echo canceler.
- **External:** When using the echo canceler equipped with the external equipment.
- **Off:** Deactivates the echo canceler.

(Continued)

Beep Sound: Selects whether to sound the beep when you press the buttons on the Remote Commander.
 On: Activates the beep sound.
 Off: Deactivates the beep sound.
Recording Mute: Selects whether to output the audio from the AUDIO OUT (MIXED) jack.
 On: Does not output the audio.
 Off: Outputs the audio.

General Setup Menu

Page 1



General Setup

Page: 1/3

Terminal Name:

Dual Monitor: Off

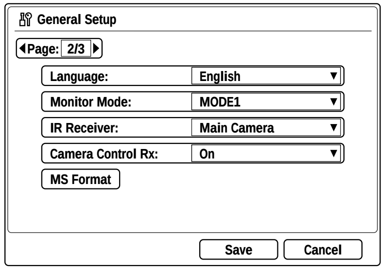
Sleep Mode: On

Sleep Time: 30

Time Display: On

Terminal Name: Enter the terminal name to be reported to an external MCU.
Dual Monitor: Select whether to use the dual-monitor function.
 On: Activates the dual-monitor function.
 Off: Deactivates the dual-monitor function.
Sleep Mode: Select whether to turn into sleep mode.
 On: Turns into sleep mode.
 Off: Does not turns into sleep mode.
Sleep Time: Specifies the time to turn into sleep mode. This is set between 1 to 99 minutes.
Time Display: Selects whether to display the elapsed time.
 On: Displays the elapsed time.
 Off: Does not display the elapsed time.

Page 2



General Setup

Page: 2/3

Language: English

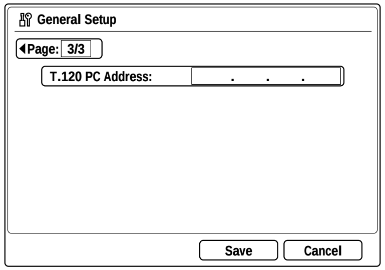
Monitor Mode: MODE1

IR Receiver: Main Camera

Camera Control Rx: On

Language: Selects the language of the messages.
 English: Displays messages in English.
 French: Displays messages in French.
 Germany: Displays messages in German.
 Japanese: Displays messages in Japanese.
 Spanish: Displays messages in Spanish.
 Italian: Displays messages in Italian.
Monitor Mode: Selects the remote control mode of the IR repeater. Normally, set it to MODE1 (PCS-1600) or to MODE3 (PCS-1600P).
 MODE1: Sets it to mode 1.
 MODE2: Sets it to mode 2.
 MODE3: Sets it to mode 3.
 MODE4: Sets it to mode 4.
IR Receiver: Selects the remote sensor. Normally, set it to Main Camera.
 Main Camera: Activates the remote sensor on the camera.
 Body: Activates the remote sensor on the Compact Processor.
Camera Control RX: Selects whether to ignore the camera control commands from the far end.
 On: Does not ignore the camera control commands.
 Off: Ignores the camera control commands.
MS Format: Formats the “Memory Stick.”

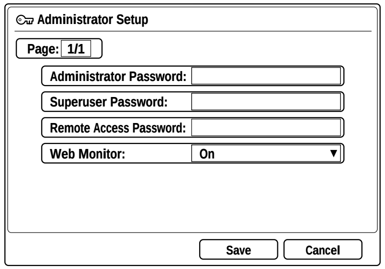
Page 3


General Setup
Page: 3/3
T.120 PC Address: . . .
Save
Cancel

T.120 PC Address: Input the IP address of the PC used for the T.120 data conference.

Administrator Setup Menu

This menu is only for an administrator. If you set your password, the password is necessary to modify the Setup and Phone Book menus. Also, the password is necessary to access the Administrator Setup Menu.


Administrator Setup
Page: 1/1
Administrator Password:
Superuser Password:
Remote Access Password:
Save
Cancel

Web Monitor: On

Adminstrator Password: Sets the password for the administrator. This password is necessary to modify the Setup and Phone Book menus.
Superuser Password: Sets the password for the superuser. This password is necessary to modify the Phone Book menu.
Remote Access Password: Sets the password to access from the Web. The password for administrator or superuser can also be used to access from the Web.

Web Monitor: Selects whether or not the Web monitoring function is used from the Web.
On: Gives permission for viewing the JPEG images from the Web.
Off: Does not give permission for viewing the JPEG images from the Web.

ISDN Setup Menu

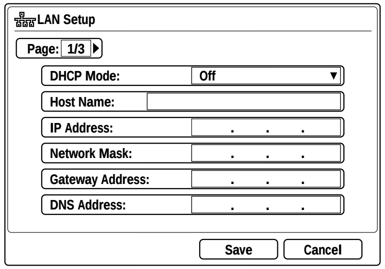
Sets up the ISDN attribute. See page 78 for details.

LAN Setup Menu

When you hold a meeting on a LAN, upgrade the system using the optional PCS-UC161 Upgrade Kit, and set up the LAN Setup menu.

For details on the setup below, consult a person having charge of your network.

Page 1


LAN Setup
Page: 1/3
Host Name:
IP Address: . . .
Network Mask: . . .
Gateway Address: . . .
DNS Address: . . .
Save
Cancel

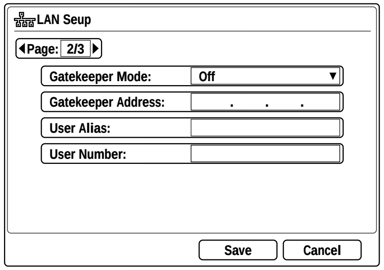
DHCP Mode: Off

DHCP Mode: Sets up the DHCP (Dynamic Host Configuration Protocol).
Auto: Automatically gets your IP address and network mask. Check your IP address on the Machine Information menu after you get them.
Off: Sets DHCP to OFF. When set to OFF, enter your IP address and network mask.

(Continued)

Host Name: Enter your host name.
IP Address: Enter your IP address.
Network Mask: Enter your network mask.
Gateway Address: Enter your default gateway address.
DNS Address: Enter your DNS (Domain Name System) server address.

Page 2


LAN Seup
Page: 2/3
Gatekeeper Mode: Off
Gatekeeper Address: . . .
User Alias:
User Number:

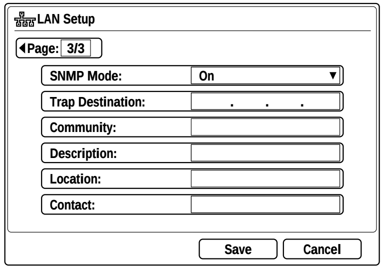
Gatekeeper Mode: Sets up whether you use the gatekeeper or not.
- **On:** Uses the gatekeeper.
- **Off:** Does not use the gatekeeper.
- **Auto:** Automatically detects the gatekeeper and use it.

Gatekeeper Address: Enter your gatekeeper address.
User Alias: Enter your user alias address (H.323 alias) on the gatekeeper.
User Number: Enter your user number (E.164 number) on the gatekeeper.

Note

The LAN Setup menu (Page 2) is accessed only when the system has been upgraded using the optional PCS-UC161 Upgrade Kit.

Page 3

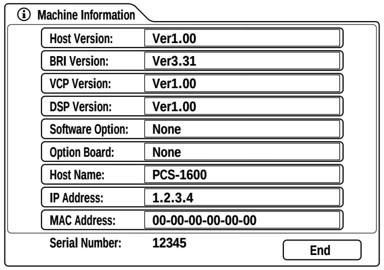

LAN Setup
Page: 3/3
SNMP Mode: On
Trap Destination: . . .
Community:
Description:
Location:
Contact:

SNMP Mode: Sets up whether the SNMP agent service is effective or not.
- **On:** Sets the SNMP agent service effective.
- **Off:** Sets the SNMP agent service ineffective.

Trap Destination: Enter your SNMP administrator address where you send the trap.
Community: Enter your community name that managed by the SNMP administrator. “public” has been entered as the default. Normally, you do not need to change this item.
Description: Enter the description of the unit. “Videoconference Device” has been entered as the default. You cannot change this item.
Location: Enter the location you install this unit.
Contact: Enter information on your administrator who manages this unit.

Machine Information Menu

Displays the version and installed option of the Compact Processor



Host Version: Ver1.00
BRI Version: Ver3.31
VCP Version: Ver1.00
DSP Version: Ver1.00
Software Option: None
Option Board: None
Host Name: PCS-1600
IP Address: 1.2.3.4
MAC Address: 00-00-00-00-00-00
Serial Number: 12345

Host Version: Displays the software version.
BRI Version: Displays the BRI version.
VCP Version: Displays the VCP version.
DSP Version: Displays the audio DSP version.
Software Option: Displays the optional software installed into the unit.
  None: The optional software has not been installed.
  MCU: The PCS-UC160 Upgrade Kit has been installed.
  H.323: The PCS-UC161 Upgrade Kit has been installed.
  MCU, H.323: The PCS-UC160/UC161 Upgrade Kits have been installed.
Option Board: Displays the optional board installed into the unit.
  None: The optional board has not been installed.
  2BRI: The PCS-I160 BRI Board has been installed.
  V.35: The PCS-I161 V.35 Board has been installed.
Host Name: Displays the host name (Only when the PCS-UC161 Upgrade Kit has been installed).
IP Address: Displays the IP address (Only when the PCS-UC161 Upgrade Kit has been installed).
MAC Address: Displays the MAC address.
Serial Number: Displays the serial number.

Chapter 5

Meetings With Optional Equipment

Installing the Optional Board

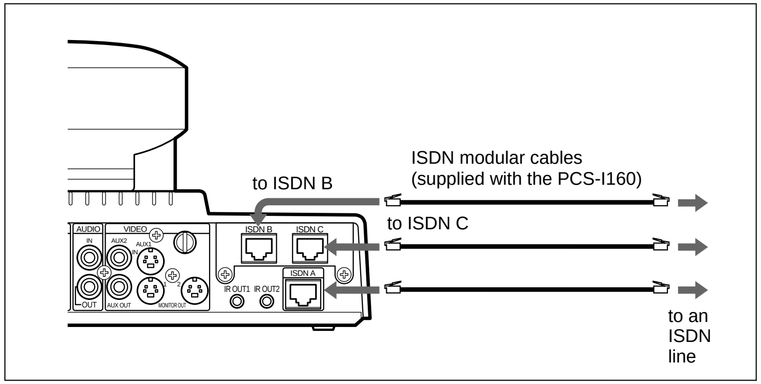
You need to install the optional board to connect via three ISDN lines or via the V.35 interface.

For details on the installation of optional Boards, consult your Sony dealer.

Board	Function
PCS-I160 BRI Board	Connects via three ISDN lines. When using this unit that has been upgraded with the PCS-UC160 as the MCU (Multipoint Control Unit), this board is required.
PCS-I161 V.35 Board	Connects via the V.35 interface.

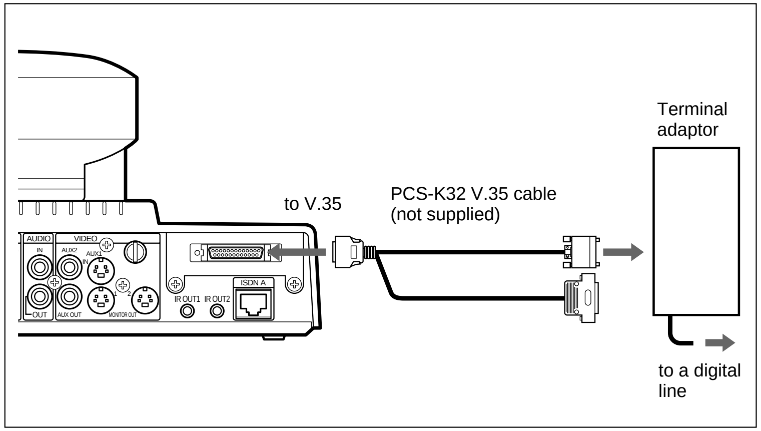
Using Three ISDN Lines

You need to install the optional PCS-I160 BRI Board. You can connect with 6B channels.


ISDN modular cables
(supplied with the PCS-I160)
to ISDN B
to ISDN C
to an ISDN line
AUDIO
VIDEO
IN
OUT
AUX2
AUX1
AUX OUT
MONITOR OUT
ISDN B
ISDN C
ISDN A
IR OUT1
IR OUT2

Using the V.35 Interface

You need to install the optional PCS-I161 V.35 Board. You can connect via the V.35 interface.


Terminal adaptor
to V.35
PCS-K32 V.35 cable
(not supplied)
to a digital line
AUDIO
VIDEO
IN
OUT
AUX2
AUX1
AUX OUT
MONITOR OUT
ISDN A
IR OUT1
IR OUT2

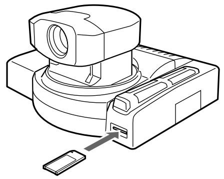
Upgrading the Software

Follow the procedure below to upgrade the software.

To install the Upgrade Kit

1 Insert the “Memory Stick” into the Memory Stick slot.

Insert it in the arrow mark direction with the mark faced upward.



2 Turn on the Compact Processor.

After the upgrade is complete, the launcher menu appears.

Note

Do not turn off the power or eject the “Memory Stick” before the launcher menu appears.

3 Push the “Memory Stick” inward, then release your finger.

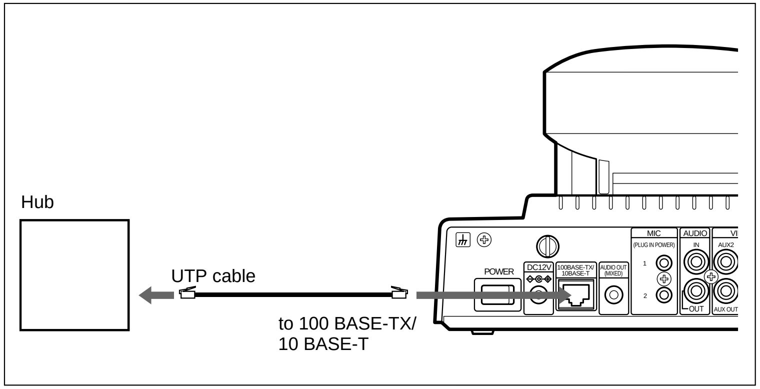
The “Memory Stick” comes out a little.

4 Open the Machine Information menu to check upgrading is complete.

5 Stick the serial number sticker to the bottom of the Compact Processor.

Connection using a LAN

You need to upgrade the system using the optional PCS-UC161 Upgrade Kit. You can connect on a LAN. Use the UTP (Unshielded Twisted Pair) category 5 cable.

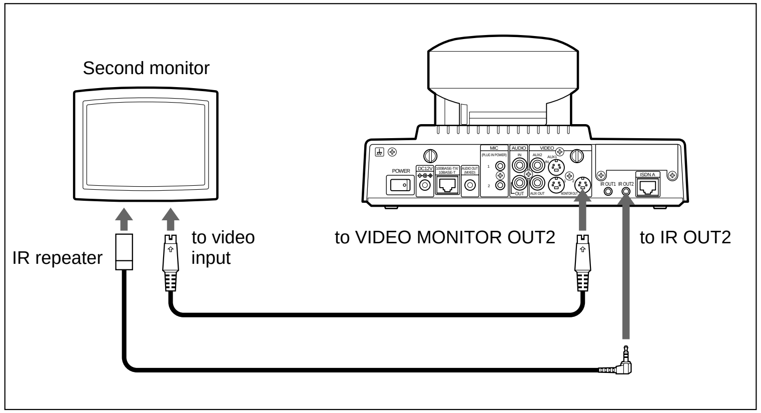

Hub
UTP cable
to 100 BASE-TX/
10 BASE-T
POWER
DC12V
100BASE-TX/
10BASE-T
AUDIO OUT
(MIXED)
MIC
(PLUG IN POWER)
AUDIO
IN
AUX2
OUT
AUX OUT

Using Dual Monitors

You can use two monitors during a meeting, one for moving pictures and the other for still pictures.

To connect a TV monitor for the dual monitor function

Connect the second TV monitor (for dual monitor function) to the VIDEO MONITOR OUT2 jack on the Compact Processor. The first TV monitor then becomes the monitor for viewing motion pictures. Insert the IR repeater below the remote sensor of the TV monitor.


Second monitor
IR repeater
to video
input
to VIDEO MONITOR OUT2
to IR OUT2

To enable the dual monitor function

Set Dual Monitor to On in the General Setup menu. The default setting is Off.

For details on the Dual Monitor item, see “General Setup menu” on page 98.

Using Optional Microphones

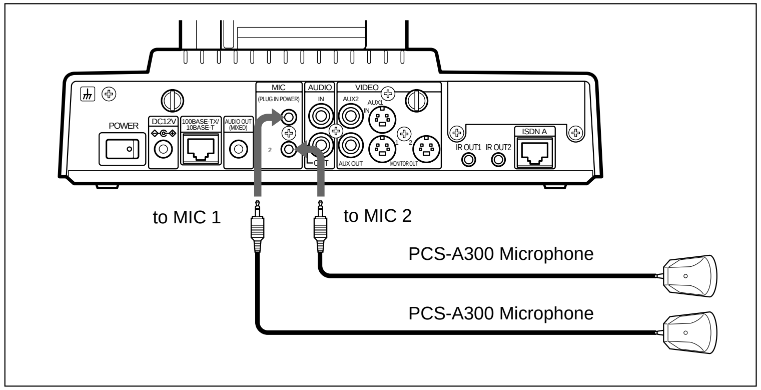
The Compact Conference Package is designed to accommodate three participants at one terminal. You can add the optional PCS-A300 Microphones to allow for more participants.

Notes

- Set Mic Select to External in the Audio Setup menu.
- The built-in microphone is not activated after connecting the external microphone.

Connecting the Microphone

You can add two microphones. Power for the microphone is provided from the Compact Processor.


POWER
DC12V
100BASE-TX/10BASE-T
AUDIO OUT (MIXED)
MIC
(PLUG IN POWER)
AUDIO
IN
VIDEO
AUX2
AUX1
OUT
AUX OUT
MONITOR OUT
IR OUT1
IR OUT2
ISDN A
to MIC 1
to MIC 2
PCS-A300 Microphone
PCS-A300 Microphone

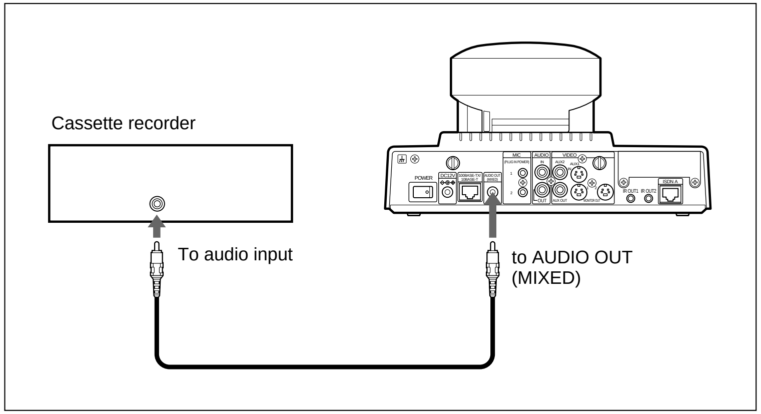
Notes on installing the PCS-A300 Microphone

- Install the microphone at a half meter apart from participants.
- Install the speaker in direction of the rear of the microphones.
- Install the microphone in a quiet, echo-free room.
- Install the microphone away from potential noise sources.
- Do not place a sheet of paper over the microphone or move the microphone since reflecting echoes to a remote party may increase temporarily. It needs an input audio signal for a couple of seconds to settle down the reflecting echoes.

Recording the Meeting Audio

You can record the audio during a meeting. Connect a cassette recorder to the AUDIO OUT (MIXED) jack. You can record both local and remote audios, or only record remote audios. When you record both local and remote audios, set Recording Mute to On in the Audio Setup menu. When you only record remote audios, set it to Off.

For details on Recording Mute, see "Audio Setup menu" on page 97.


Cassette recorder
To audio input
to AUDIO OUT (MIXED)

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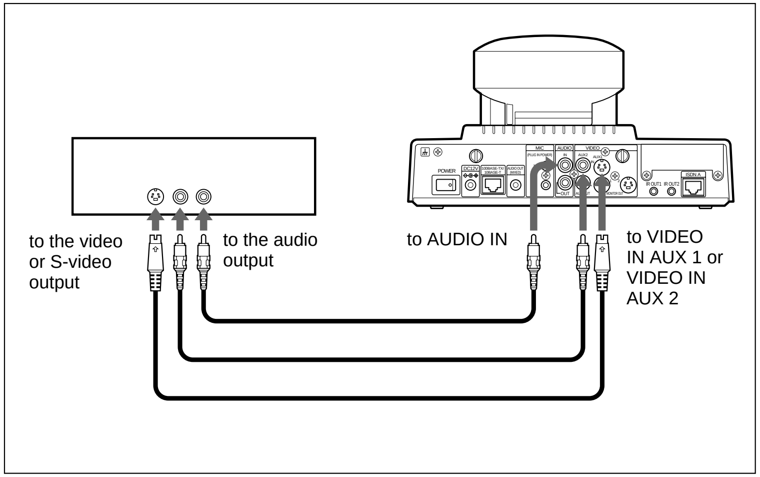
Using the External Equipment

The Compact Processor can connect two external video equipment for input; two equipment for output (including the TV monitor).

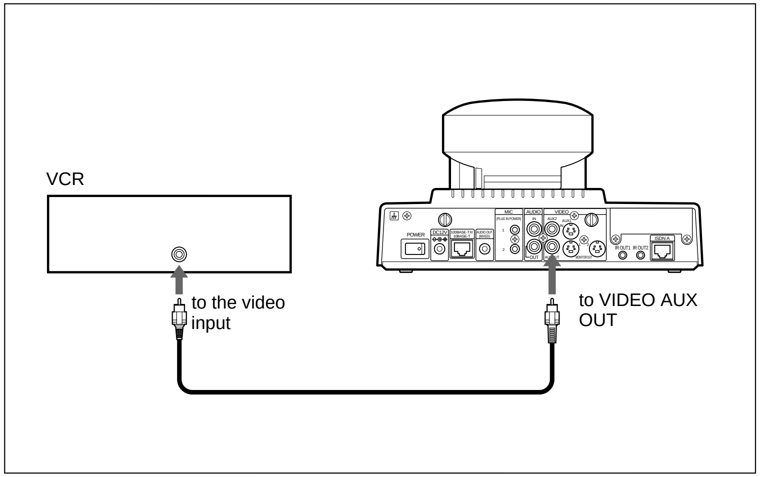
Connecting External Video Equipment for Input

Connect video equipment, such as a VCR. The system is equipped with two video inputs and one audio input.


to the video or S-video output
to the audio output
to AUDIO IN
to VIDEO IN AUX 1 or VIDEO IN AUX 2

Connecting External Equipment for Output

You can connect external video equipment for output, such as a VCR, besides the TV monitor.


VCR
to the video input
to VIDEO AUX OUT

Holding a T.120 Data Conference

You can have a data conference based on ITU-T Recommendation, T.120 standards when you connect a PC which NetMeeting (not supplied) has been installed with the Compact Processor.

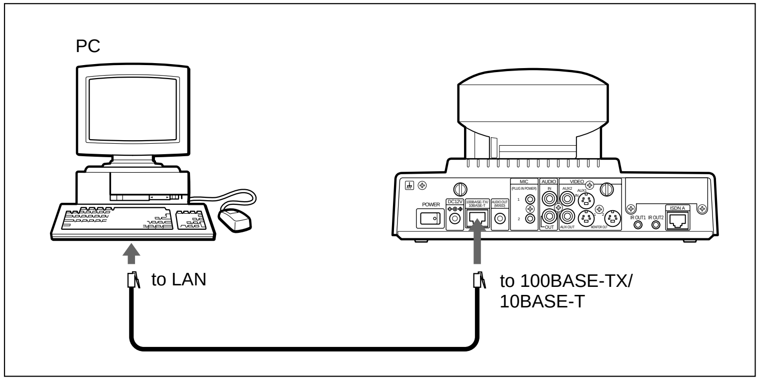
NetMeeting is a registered trademark of Microsoft Corporation.

Notes

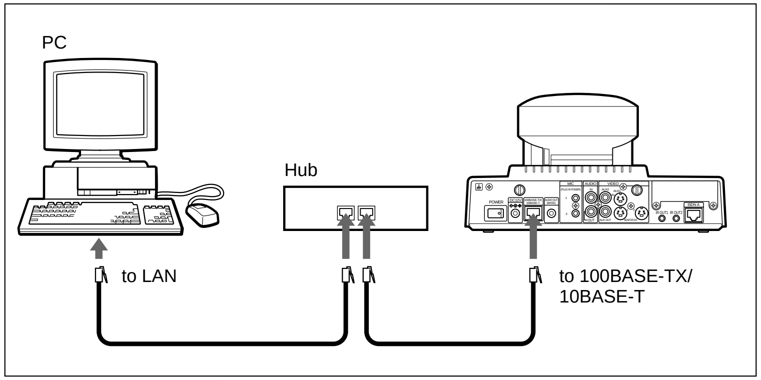
- When you have upgraded the system using the optional PCS-UC161 Upgrade Kit, and using on a LAN, you cannot hold a T.120 data conference.
- When you use the Compact Processor as the MCU, you cannot hold a T.120 data conference.

Connecting With a PC

Connect the LAN port of your PC and the 100BASE-TX/10BASE-T on the Compact Processor using the category 5 UTP cross cable.



When you use a Hub, connect as follows using straight cables.



To install NetMeeting

Install NetMeeting in your PC following the procedure.

Setting Up the Compact Processor

Enter the IP address of your PC in which NetMeeting is installed into the T.120 PC Address box in the General Setup menu.

When you call a remote party to hold a data conference
Set T.120 Data to On in the Dial Setup menu.

When you receive a call from a remote party to hold a data conference
Set T.120 Data to On in the Answer Setup menu.

Note

We recommend to set Audio Mode to G.728 in the Dial Setup menu.

Connecting with NetMeeting

1. Select [NetMeeting] from the start pop-up menu or click on the NetMeeting icon.
2. Set the Compact Processor to be on line.

   Check that the indication T.120 appears on the screen.
3. Click on [Calling] at both local or remote.
4. Enter the IP address of the Compact Processor into [Address].
5. Click on the [Call] button.

   Soon, the connection is established.

For details on how to use, refer to the NetMeeting Help menu.

On data transfer rate

The Compact Processor is compatible with the following transfer rate: MLP 6.4 Kbps, 24 Kbps, 32 Kbps, and HMLP 62.4 Kbps.

Chapter 6

Meetings With the Upgrade Kit

Features

The optional PCS-UC160 Upgrade Kit is designed to add the MCU function to the PCS-1600/1600P Compact Conference Package.
You can hold an MCU conference based on the ITU-T Recommendation, H.231 standard.

Note

The PCS-I160 BRI Board is also required for holding a point to multi-point meeting. (However, you can only install the MCU function without the PCS-I160 BRI Board.)

Starting a Point to Multi-Point Meeting

You can hold a point to multi-point meeting among four terminals (including this terminal). You can add one normal audio phone in the network.

Note

Before you start a meeting verify that MCU Mode is set to On in the MCU Setup menu.

For details on registration on the Phone Book menu, see “Registering a Remote Party” on page 71.

Calling Remote Parties

To call registered remote parties

1 Press the PHONE BOOK button on the Remote Commander.

The Phone Book menu appears on the monitor screen.

2 Select an index (the first remote party) with the joystick on the Remote Commander.

3 Select Dial with the joystick on the Remote Commander, then press the joystick. Or press the CONNECT/ DISCONNECT (☎/☎) button on the Remote Commander.

The system dials the selected remote party in step **2**, and the indication “Dialing” appears on the monitor screen. When the connection is completed, the indication “MEETING STARTS!” appears on the monitor screen.

4 Repeat steps **1** to **3** to connect with the second and third parties.

Note

When connecting to the remote party that is set to be connected via 3B-channel or more, the system only dials the number in the A1 box, or the ones in the A1 and A2 boxes.

To call unregistered remote parties

1 Select Manual Dial with the joystick on the Remote Commander in the launcher menu, then press the joystick.

The Manual Dial menu appears on the monitor screen.

2 Enter the telephone number of the first remote party to have a meeting with in the A1 and A2 boxes (when Number of Lines is set to 1B, only in the A1 box).

3 Select Dial with the joystick on the Remote Commander, then press the joystick. Or press the CONNECT/ DISCONNECT (☎/☎) button on the Remote Commander.

The system dials the number that is input in step **2**, and the indication “Dialing” appears on the monitor screen. When the connection is completed, the indication “MEETING STARTS!” appears on the monitor screen.

4 Repeat steps **1** to **3** to connect the second and third parties.

To hold a meeting with registered remote parties and unregistered parties mixed

Follow steps **1** to **3** of “To call registered remote parties” and steps **1** to **3** of “To call unregistered remote parties” according to whether the party is registered.

Receiving Calls

The procedure is same as a normal meeting.

For details on the procedure, see “Receiving a Call” on page 42.

Starting a Point to Multi-Point Meeting

Notes on Point to Multi-Point Meetings

See also “The Attribute” on page 127.

- The chair control is only available from this terminal. Remote parties cannot operate it.
- This system does not support multiplex MCU connections.
- The number of lines is set to two when Number of Lines is set to 2B; is set to one when set to 1B. This is regardless of the setting in the Dial Setup menu.
- One ISDN jack can connect with only one terminal. Even if you connect via 1B-channel, the number of remote parties is up to three.
- This system does not support connections via the Inverse Multiplexer interface (BONDING).

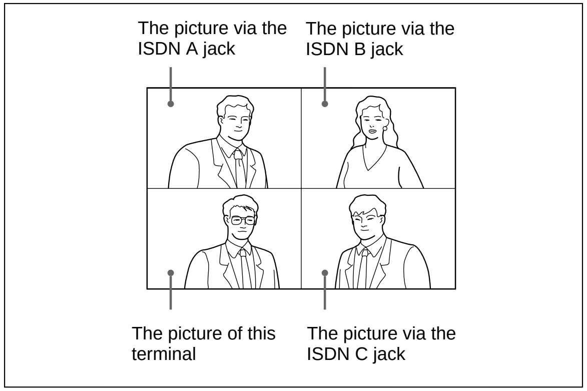
Operating Chair Controls

You can do the following operations during a meeting.

Switching the Broadcast Mode

There are two broadcast modes:

4 Split mode
Displays each party on the four-split screen.

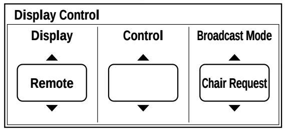

The picture via the ISDN A jack
The picture via the ISDN B jack
The picture of this terminal
The picture via the ISDN C jack

Voice Active mode
Detects the terminal that speaks at the highest level among the connected terminals, and sends the picture to all the terminals.
The indication ▦ appears at the lower-left on the monitor screen in Voice Active mode.
The indication V.A appears on the monitor screen in Voice Active mode.

The default broadcast mode when starting a meeting is according to the setting in the MCU Setup menu.

1 Press the FAR/NEAR button on the Remote Commander.

The Display Control menu appears.


Display Control
Display
Control
Broadcast Mode
Remote
Chair Request

(Continued)

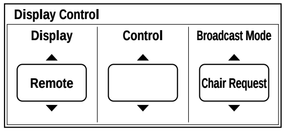
2 Select 4 Split or Voice Active from Broadcast Mode with the joystick on the Remote Commander, then press the joystick.

Each time you select the setting, the mode is switched between the 4 Split mode and the Voice Active mode.

Selecting the Picture to be Broadcast

You can manually select the picture to be broadcast. Once you select the picture, both the broadcast modes are canceled, and the selected picture is displayed on each screen at full-size.

Select the desired terminal number from Terminal with the joystick on the Remote Commander, then press the joystick.



The picture from the selected terminal is broadcast.

The alphabet A, B, or C is added on the indication ⊞. This indicates the terminal being broadcast. The indication ⊞ without the alphabet indicates that the picture of the local terminal is being broadcast.

To go into broadcast mode

Select 4 Split or Voice Active from Broadcast Mode with the joystick on the Remote Commander, then press the joystick. The system returns to the 4 Split mode or the Voice Active mode.

Verifying the Picture Shot by the Local Camera

You can display the local picture only on your screen in Voice mode; the other terminals are still in Voice mode.

Press the FAR/NEAR button on the Remote Commander. The local picture is displayed only on your screen.

To return to the Voice mode

Press the FAR/NEAR button on the Remote Commander again.

Receiving the Broadcast Request

When you receive the command “MCV*” from the connected terminal, the picture of that terminal is automatically broadcast. If the meeting is held in Voice mode, the mode is canceled, and the picture is broadcast at full-size.
When you receive the command “MCV CANCEL,” the system returns to the previous mode.

*One of the commands that is sent to the MCU from the slave terminal.

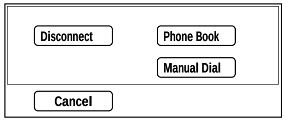
Note

If you have received the command “MCV” from other terminal, or you have manually selected the picture to be broadcast, the command “MCV” is rejected.

Ending a Point to Multi-Point Meeting

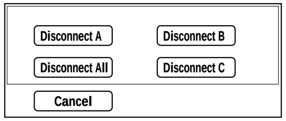
1 Press the CONNECT/DISCONNECT (☎/☎) button on the Remote Commander.

The following menu appears on the monitor screen.



2 Select Disconnect with the joystick on the Remote Commander, then press the joystick.

The screen changes to the four-split screen, and the following menu appears on the monitor screen.



3 **To disconnect a selected terminal**
Select the number to be disconnected with the joystick on the Remote Commander, then press the joystick.

The selected terminal is disconnected.

To disconnect all the terminals
Select Disconnect All with the joystick on the Remote Commander, then press the joystick. Or press the CONNECT/DISCONNECT (☎/☎) button on the Remote Commander again.

All the terminals are disconnected.

To cancel the disconnection

Select Cancel with the joystick in step **3**, then press the joystick.

Notes on Secondary Terminals

If the terminal that is not adequate for the setting on this system is connected, this terminal is called as the secondary terminal. When the secondary terminal is connected, some of the function is limited as follows:

When a normal phone is connected

You can connect only one normal audio phone in the network. If two phones try to connect, the system will disconnect its line or reject the call.
The audio mode of the other terminals is not influenced:

- Once a phone is connected.
- After the normal phone ends a meeting.

When the slave terminals via 1B-channel and 2B-channel are mixed when Number of Lines is set to 2B

Holds a meeting via 2B-channel with the 2B-channel terminals and via 1B-channel with the 1B-channel terminals. The meeting with the 1B-channel terminals is as follows:

- Send/receive the audio.
- Receive the video.

If 2B-channel terminals end a meeting, and only 1B-channel terminals are in the network, the meeting holds via 1B-channel. This 1B-channel meeting can send/receive the audio and video.

When holding a meeting in the 64 K network, the 56 K terminal is connected

The system automatically changes the transfer rate to 56 Kbps. The slave terminal that cannot change the rate becomes the secondary terminal.
The meeting with the secondary terminal is as follows:

- Send/receive the audio.
- Receive the video.

When the different audio mode terminal is connected, and the video mode is different

The system automatically changes the video rate to the lowest one. The slave terminal that cannot change the video rate becomes the secondary terminal.
The meeting with the secondary terminal is as follows:

- Send/receive the audio.
- Receive the video.

Notes on Secondary Terminals

When the terminal whose video rate is lower is connected
Broadcasts the picture to all the terminals with the lowest frame rate in the network.

When the terminal whose video mode is only QCIF is connected
Does not broadcast the picture to the QCIF terminal.

When Video Mode is set to H.263
The H.263 mode is only available when all the terminals are in H.263 mode. If there is a terminal in H.261 mode, the meeting will be held in H.261 mode.

The Attribute

Number	Attribute	Value
1	Maximum number of terminals that can be connected to a single MCU	3 (4 when including this terminal)
2	Maximum number of concurrent (independent) conferences that can be supported in a single MCU	1
3	Maximum number of ports that can be connected to other MCUs	0
4.1	Network interfaces at each port	BRI
4.2	Restricted network capability	Restrict_Required
5	Transfer rates available at each port	2B, 1B
6	Audio Processor	Equipped
6.1	mixed/switched noise/echo suppression on “silent” ports	Mixed No
6.2	audio algorithm at each port	G.711, G.728, G.722
7	Video Processor (moving pictures)	Equipped
7.1	switched/mixed	Voice activate/four-split/user control
7.2	video algorithm at each port	H.261, H.263
8	Data Processor	No
8.1	data broadcast facility, LSD data broadcast facility, HSD	No No
8.2	MLP Processor	No
9	Encryption	Not support
10	Method of choosing Selected Comm Mode - SCM	Set with users: ISDN rate (1B/2B), audio (G.711/G.722/G.728) Auto: Video frame rate (7.5/10/15 fps), video encoding mode (CIF/QCIF) ISDN transfer rate can be selected from 56 Kbps or automatic with users. Video mode (H.261/H.263) can be selected from H.261 or automatic (H.261/H.263) with users.
11	Can deal with secondary terminals	Audio: send/receive Video: receive
12	Call set-up provision(s)	No call/receive reservation
13	Control capabilities	–
13.1	Numbering of terminals Simple chair control using BAS	No No
13.2	MLP facilities [refer to ITU-T T series]	No No

(Continued)

The Attribute

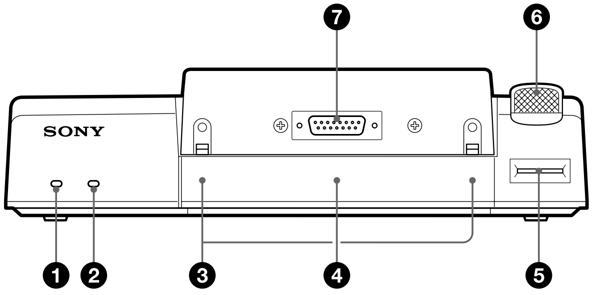
Number	Attribute	Value
13.3	H.224 (simplex data)	No
14	Cascading	No
14.1	Fixed rates (“simple”)	No
14.2	Master/Slave	No
15	Terminal identification	No
16	MBE capability Register necessary information such as the telephone number and index number.	No

Appendix

Location and Function of Parts and Controls

Compact Processor

Main unit (front)



(Continued)

❶ POWER lamp (green)
When you set the POWER switch to on, this lamp lights up. This lamp goes off when the system is on standby, or flashes when the system is in sleep mode.

❷ STANDBY lamp (orange)
This lamp lights up when the system is on standby. This lamp goes off when the system is in sleep mode.

❸ IR (Infrared) sensor
Detects the infrared video signal emitted from the optional PCS-DS150/DS150P Document Stand. The infrared video input via this sensor is assigned as Object.

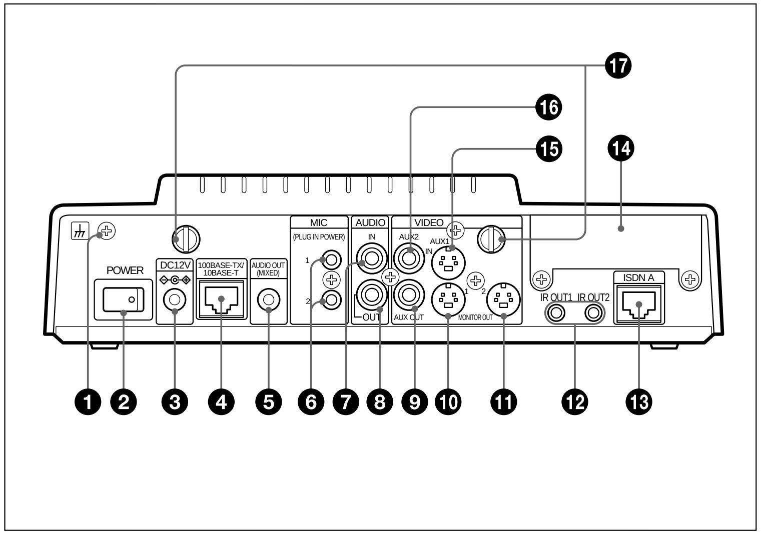
❹ Remote sensor
When operating the Compact Processor with the Remote Commander, point it toward this sensor.
If you use this sensor, set IR Receiver to Body in the General Setup menu. This is set to Main Camera at factory.

❺ “Memory Stick” slot
Insert a “Memory Stick” into this slot.

❻ Microphone

❼ CAMERA connector
Connect to the camera.

Main unit (rear)



❶ ⏚ Terminal
Connect the earthing wire to this terminal.

❷ POWER switch
Switch the Compact Processor to on/off.

❸ DC 12V jack
Connect the supplied PCS-AC15 AC adaptor to this jack.

❹ 100BASE-TX/10BASE-T jack (8-pin modular)
Connect another Compact Processor to this jack when holding a meeting on a LAN.

❺ AUDIO OUT (MIXED) jack (phono jack)
Connect to an audio input jack of a VCR to minute a meeting.

❻ MIC1/MIC2 jacks/PLUG IN POWER (phono jack)
Connect the optional PCS-A300 Microphone(s) to these jacks. These provide the power supply to the microphone(s) connected to these jacks.

❼ AUDIO IN jack (phono jack)
Connect to the audio output jack of the external equipment.

❽ AUDIO OUT jack (phono jack)
Connect to the audio input jack of the TV monitor.

(Continued)

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❾ VIDEO AUX OUT jack (phono jack)
Connect to the video input jack of the external equipment.

❿ VIDEO MONITOR OUT1 jack (mini DIN 4-pin)
Connect to the video input jack of the TV monitor.

⓫ VIDEO MONITOR OUT2 jack (mini DIN 4-pin)
Connect to the video input jack of the second TV monitor when using the dual monitor function.

⓬ IR OUT1/2 jacks (minijack)
Connect the supplied IR repeater to these jacks. Connect the IR repeater to the IR OUT1 jack for the monitor connected to the VIDEO MONITOR OUT1 jack and connect the IR repeater to the IR OUT2 jack for the monitor connected to the VIDEO MONITOR OUT2 jack.

⓭ ISDN A jack (8-pin modular)
Connect the ISDN line to this jack using the ISDN modular cable.

⓮ Interface board slot
Install the optional board into this slot.

⓯ VIDEO IN AUX 1 jack (mini DIN 4-pin)
Connect to the video output jack of the external equipment.

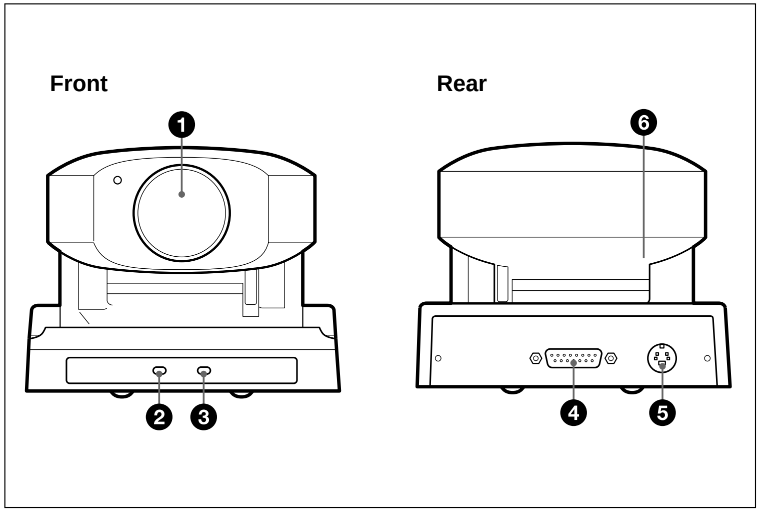
⓰ VIDEO IN AUX 2 jack (phonojack)
Connect to the video output jack of the external equipment.

⓱ Camera screws
Loosen these screws to detach the camera from the main unit.

Note

Tighten the camera screws firmly. If the screws are loose, the camera may fall down, and it causes personal injury.

Camera



❶ Lens

❷ POWER lamp (green)
When you set the POWER switch to on, this lamp lights up. This lamp goes off when the system is on standby.

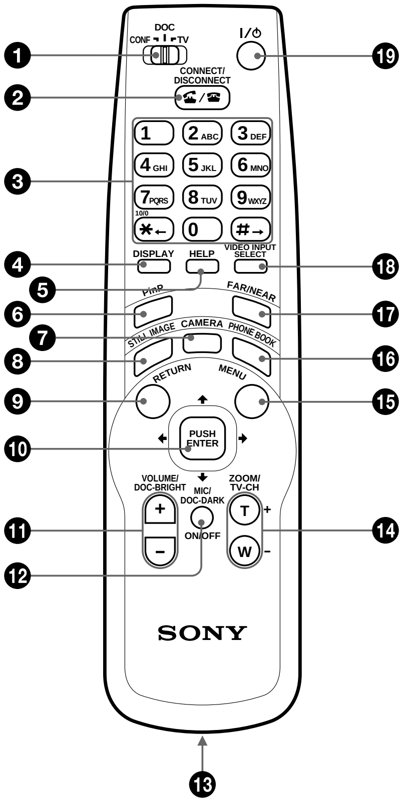
❸ Remote sensor
When operating the Compact Processor, point it toward this sensor. Normally, use this sensor for operation.

❹ PROCESSOR connector
Connect to the main unit.

❺ VISCA OUT connector
This is deactivated in this system.

❻ BACKUP switch
Set it to ON to store the presets.

Remote Commander


❶
❷
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⓭
⓮
⓯
⓰
⓱
⓲
⓳
DOC
CONF
TV
I/⏻
CONNECT/
DISCONNECT
1
2 ABC
3 DEF
4 GHI
5 JKL
6 MNO
7 PQRS
8 TUV
9 WXYZ
10/0
✱←
0
#→
DISPLAY
HELP
VIDEO INPUT SELECT
PinP
FAR/NEAR
STILL IMAGE
CAMERA
PHONE BOOK
RETURN
MENU
PUSH ENTER
VOLUME/
DOC-BRIGHT
MIC/
DOC-DARK
ON/OFF
ZOOM/
TV-CH
T
W
+
–
SONY

When you press the buttons on the Remote Commander, you can hear the beep from the Compact Processor. If you do not need to hear the beep, you can mute the beep in the menu setting.

For details, see “Audio Setup menu” on page 97.

Note

When you operate the Compact Processor, set the CONF/DOC/TV selector to “CONF.”

❶ CONF/DOC/TV selector

Selects the equipment to operate.

CONF: Operates the Compact Processor.

DOC: Operates the optional PCS-DS150/DS150P Document Stand.

TV: Operates a Sony TV.

❷ CONNECT/DISCONNECT (☎/☎) button

Press this button to connect or disconnect a remote party.

❸ Number (0 – 9, #, ✱) buttons

Press these buttons to input characters, such as a telephone number, sub-address, or a name.

❹ DISPLAY button

Press this button to display indicators.

❺ HELP button

Press this button to display an information guide.

❻ PinP (BACK SPACE) button

Press this button to display the inset window. When inputting characters, use this button to delete the last character.

❼ CAMERA (LINE COPY) button

Press this button to display the Camera menu. When inputting characters, use this button to copy the characters to the next box.

❽ STILL IMAGE (CLEAR) button

Press this button to display the Still Image menu. When inputting characters, use this button to delete all the characters in the box.

❾ RETURN button

Press this button to go back to the previous menu.

❿ Joystick

Use the joystick to select the menu or an item, or to control the camera.

⓫ VOLUME/DOC-BRIGHT (+/–) buttons

These buttons adjust the volume.

+: press to increase the volume.

–: press to decrease the volume.

⓬ MIC/DOC-DARK (ON/OFF) button

This button mutes the sounds of the local party. Press again to cancel the muting.

Note

The name of the button has the word DARK, however, this does not function in this system.

⓭ Battery compartment

Insert two size AA (LR6) alkaline batteries.

(Continued)

⑭ ZOOM/TV-CH (T+/W–) buttons
These buttons control the zoom of the camera.
T+: press to zoom in the picture.
W–: press to zoom out the picture.

⑮ MENU button
Displays the menu on the monitor screen.

⑯ PHONE BOOK (SYMBOL) button
Press this button to display the Phone Book menu.

⑰ FAR/NEAR (ALPHA/NUM) button
Switches the picture between local and remote.

⑱ VIDEO INPUT SELECT buttons
Selects the input.

⑲ I/⏻ button
Press this button to turn into standby when the system is turned on; to turn on the system when the system is on standby.

To operate a Sony TV monitor

Note

When you operate a Sony TV, set the CONF/DOC/TV selector to "TV."

⑪ VOLUME/DOC-BRIGHT (+/–) buttons
These buttons adjust the volume.
+: press to increase the volume.
–: press to decrease the volume.

⑭ ZOOM/TV-CH (T+/W–) buttons
These buttons select the channel of the TV monitor.
T+: Tunes to the upper channel.
W–: Tunes to the lower channel.

⑱ VIDEO INPUT SELECT button
Selects the input of the TV monitor.

⑲ I/⏻ button
Turns on/off the TV monitor when using an NTSC type TV monitor. Turns off the TV monitor when using a PAL type TV monitor.

On Screen Messages

The following messages appear on the TV monitor when using the Compact Processor and gives instructions on dealing with them.

Message	Remedy
INCORRECT DIALING SETUP	Make sure the selected entry is correctly registered.
CANNOT COMPLETE CONNECTION (The following code and message appear.)	—
0 Unknown network error:	Try again later.
1 Number does not exist:	Check the number and try again.
2,3,6 Network congestion:	Try again later.
16 Normal disconnection:	(The line has been disconnected normally.)
17 Line is busy:	Try again later.
18,19 System not responding:	Check if the remote system is connected.
21 Call rejected:	Check if the remote system is connected.
22 Called party number changed:	Check the number and try again.
26 Connection restoration request:	Try again later.
27 Remote system out of order:	Check if the remote system is operational.
28 Invalid number entered:	Check the number and try again.
31, 34, 41 – 44, 47 Network not available:	Try again later.
50 Not a Subscriber:	Check the remote party's facility contract.
57,58 Bearer capability not authorized:	Check if the line rate is set correctly.
70 Restricted capability:	Set the line rate to 56K and try again.
88 Terminal attribute error:	Check the connection of the remote system.
91, 95 – 102, 111 Protocol error:	Turn off and restart the system and try again.
128 H.221 negotiation timeout:	Turn off and restart the system and try again.
131 Board mismatch:	Check the optional line interface boards.
132 Invalid SPID:	Reregister the SPID.
134 Physical link synchronization error:	Check the connection of the ISDN cable.
144, 145 Bonding negotiation timeout:	Turn off and restart the system and try again.

(Continued)

On Screen Messages

Message	Remedy
177 LAN connection timeout:	Try again later.
178 LAN connection rejected:	Try again later.
179 DNS error:	Please check DNS.
180 Dialing your own number is invalid:	Please check the address and try again.
181 GateKeeper error:	Please check the address and try again.
FAR END INACTIVE	The remote party operates the menu.
CLOSE THIS MENU TO CONNECT LINE	Close the menu.
CANNOT ESTABLISH ALL CONNECTIONS	Check to see if your partner’s telephone number is the correct one.
COMMUNICATION ERROR	Wait for a while and then try dialing again.
CONFIGURATION ERROR	Wait for a while and then try dialing again.
Command is rejected by MCU	The function is not supported for MCU if the same operation displays this message again.
CORRUPTIVE DATA STREAM. TERMINATE THE CONNECTION	A signal error occurred. The line connections are compelled to be disconnected.
MEMORY FULL	The memory capacity of the “Memory Stick” is full.
INPUT TITLE	Input an index title.
OPERATION DISABLED	—
WRONG PASSWORD	The password is wrong.
LAN CONFIGURATION ERROR (IP ADDRESS)	The IP address is not proper.
LAN CONFIGURATION ERROR (NETMASK)	The netmask is not proper.
LAN CONFIGURATION ERROR (MAC ADDRESS)	The MAC address is not proper.
LAN CONFIGURATION ERROR (DHCP ERROR)	The IP address and netmask cannot be got.
GATEKEEPER REGISTRATION ERROR	The setting of the Gatekeeper is not proper.
LAN CONFIGURATION ERROR (GATEKEEPER)	The setting of the Gatekeeper is not proper.
LAN CONFIGURATION ERROR (SNMP ERROR)	The setting of the SNMP is not proper.
LAN CONFIGURATION ERROR	The setup in the LAN Setup menu is not proper.
Memory Stick error.	The format of the “Memory Stick” is wrong.

The following messages indicate the state of the system. No action is required.

Message	Meaning
MEETING STARTS!	Connection with the remote party has been completed, the meeting can now begin.
MEETING ENDS	Operations for ending the meeting have been completed.
Charges are ****.	Indicates communication charges.
SITE A (B/C) HAS DISCONNECTED	The remote party A (B/C) has been disconnected.
INSTALLATION COMPLETED	The installation of the Upgrade Kit is complete.
Transmission of the still picture is completed.	Transmission of the still picture is completed.
STILL IMAGE TRANSMISSION CANCELLED	The transmission of the still image was canceled.
STILL IMAGE SAVED	The still picture was saved to the “Memory Stick.”
REGISTERED TO X (1–6)	The setting of the zoom and angle was registered to X (1–6).

Troubleshooting

If the Compact Processor does not function or functions incorrectly, check the following.

Symptom	Cause	Solution
The power is not turned on.	The POWER switch is not set to on.	Set the POWER switch to on. See page 21.
	The batteries in the Remote Commander are low or dead.	Replace the batteries with new ones. See page 17.
	The CONF/DOC/TV selector is not set to “CONF.”	Set the CONF/DOC/TV selector to “CONF.”
No sound or the volume is very low.	The volume is too low.	Adjust the sound volume by pressing the VOLUME/DOC-BRIGHT buttons on the Remote Commander. See page 47.
	The remote party has muted their sound.	Wait until the sound transmission from the remote party resumes.
	The Mic Select is not set properly.	Set up Mic Select properly according to the microphone to be used. See page 97.
	Audio input is not selected properly.	Set up Input Select properly. See page 97.
Picture is blurred.	Manual focus is selected but picture remains blurred.	Adjust the focus. See page 51.
	When auto focus is selected, the background is too bright, contrast is too high, or the background or the participants’ clothes contain fine line patterns.	Select manual focus and adjust manually. See page 51.
No picture.	The selected picture source is not tuned on.	Turn on the selected video equipment.
	Video input is not selected properly.	Select the video input with the VIDEO INPUT SELECT button. See page 56.
	The selected picture source is not correctly connected to the system.	Check the connection. See page 112.
	The unit has not been connected properly to a digital line.	If you have installed an optional V.35 Board, make sure the system is connected to an ISDN outlet or a digital line outlet with the terminal adaptor. See pages 16 and 106.
	A voice meeting is held.	This is not a malfunction.

Symptom	Cause	Solution
Does not connect with a remote party.	The terminal adaptor is not turned on (if you have installed an optional interface board).	Turn on the terminal adaptor.
	The remote party has not been registered in the system yet.	Register the remote party. See page 71.
Still pictures or the Phone Book cannot be saved to the “Memory Stick.”	The write-protect tab on the “Memory Stick” is set to LOCK.	Set the tab to write.
	The “Memory Stick” has already been recorded to its full capacity.	Use other “Memory Stick.”

Specifications

Compact Processor

This unit is compliant with ITU-T Recommendations H.320 and H.323.

Motion video

Operating bandwidth	56 Kbps to 128 Kbps (standard) 56 Kbps to 384 Kbps (when installing the PCS-I160) 64 Kbps to 1024 Kbps (when upgrading with the PCS-UC161 and connecting on a LAN)
Coding	H.261 (ITU-T Recommendation) H.263 (ITU-T Recommendation)
Picture elements	CIF: 352 pixels × 288 lines QCIF: 176 pixels × 144 lines
Color system	NTSC (PCS-1600) PAL (PCS-1600P)

Still Picture

Pixels	704 pixels × 480 lines (PCS-1600) 704 pixels × 576 lines (PCS-1600P)
Encoding	H.261 Annex D (4CIF)

Sound

Bandwidth	7 kHz (G.722, ITU-T Recommendation) 3.4 kHz (G.711/G.723.1/G.728, ITU-T Recommendation)
Transfer rate	48 Kbps to 64 Kbps (G.722, ITU-T Recommendation) 56 Kbps to 64 Kbps (G.711, ITU-T Recommendation) 16 Kbps (G.728, ITU-T Recommendation) 6.4 Kbps (G.723.1, ITU-T Recommendation) (when upgrading with the PCS-UC161 and connecting on a LAN)

Network

Multiplexing	Video, audio, data
Frame format	H.221 (ITU-T Recommendation)
Interface	ISDN (BRI) up to 1 line (or up to 3 lines when installing the PCS-I160) V.35 (RS-366) (when installing the PCS-I161): 56 Kbps, 64 Kbps, 56 Kbps to 384 Kbps LAN (when upgrading with the PCS-UC161 and connecting on a LAN): 64 Kbps to 1024 Kbps
Data transfer rate	LSD 1.2 Kbps, 4.8 Kbps, 6.4 Kbps MLP 6.4 Kbps, 24 Kbps, 32 Kbps HMLP 62.4 Kbps, 64 Kbps

Microphone

Bandwidth	7.0 kHz

Remote control

Far end camera control	H.281 (ITU-T Recommendation)
Data transfer	T.120 (ITU-T Recommendation)

Camera

Video signal	NTSC color, EIA standards (PCS-1600) PAL colour, CCIR standards (PCS-1600P)
Image device	1/3-inch CCD (Charge Coupled Device) Approx. 410 000 pixels (Effective: approx. 380 000 pixels) (PCS-1600) Approx. 470 000 pixels (Effective: approx. 440 000 pixels) (PCS-1600P)
Lens	f = 5.4 to 64.8 mm, F 1.8 to 2.7, Horizontal angle 4.3° to 48.8°
Focal distance	10 to 800 mm
Minimum illumination	7 lux at F 1.8/50 IRE
Illumination range	7 lux to 100 000 lux
Horizontal resolution	460 TV lines (PCS-1600) 450 TV lines (PCS-1600P)
Pan/tilt action	Horizontal ±100° Vertical ±25°

General

Power consumption	12V, 2.5 A
Operating temperature	5°C to 35°C (41°F to 94°F)
Operating humidity	20% to 80%
Storage temperature	–20°C to +60°C (–4°F to +140°F)
Storage humidity	20% to 80% (no condensation)
Dimensions	258 × 134 × 216 mm (w/h/d) (10 1/4 × 5 3/8 × 8 5/8 inches) excluding protruding parts
Mass	Approx. 2.7 kg (5 lb 15 oz)
Supplied accessories	Remote Commander (1) Size AA (LR6) alkaline batteries for Remote Commander (2) IR repeater (2) MSA-16A “Memory Stick” S-video connecting cord (1.3 m, 4.3 ft) (1) Audio connecting cable (1 m, 3.3 ft) (1) ISDN modular cable (5 m, 16.4 ft) (1) AC adaptor (1) Power cord (1) 21-pin adaptor (1) (PCS-1600P only) Velcro (2) Operating instructions (1)

Specifications

Remote Commander (PCS-R160)

Signal format	Infrared SIRCS
Control	DC 3V using two size AA (LR6) alkaline batteries
Dimensions	50 × 23.4 × 190 mm (w/h/d) (2 × 15/16 × 7 1/2 inches)
Mass	Approx. 150 g (5 oz) (including batteries)

AC Adaptor (PCS-AC15)

Power requirements	100 to 240V AC, 50/60 Hz
Power consumption	Approx. 1.0 A to 0.6 A
Operating temperature	5°C to 35°C (41°F to 94°F)
Operating humidity	20% to 80%
Storage temperature	–20°C to +60°C (–4°F to +140°F)
Storage humidity	20% to 80% (no condensation)
Dimensions	93 × 34 × 165 mm (w/h/d) (3 3/4 × 1 3/8 × 6 1/2 inches)
Mass	Approx. 470 g (1 lb 1 oz)

Optional microphone PCS-A300

Bandwidth	7.0 kHz
Dimensions	68 × 15 × 90 mm (w/h/d) (2 3/4 × 19/32 × 3 5/8 inches)
Mass	Approx. 200 g (7 lb 1 oz)
Power	Plug in power

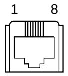
Upgrade Kit PCS-UC160/UC161

Dimensions	50 × 2.8 × 21.5 mm (w/h/d) (2 × 1/8 × 7/8 inches)
Mass	Approx. 4 g (0.14 oz)
Supplied accessories	Serial number sticker (1) Operating instructions (1)

Design and specifications are subject to change without notice.

Pin Assignment

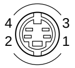
100BASE-TX/10BASE-T jack



Modular jack

Pin	Signal	Description
1	TPOP	Transmit+
2	TPON	Transmit–
3	TPIN	Receive+
4	NC	—
5	NC	—
6	TPIN	Receive–
7	NC	—
8	NC	—

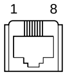
AUX1 IN/MONITOR OUT jacks



Mini-DIN 4-pin jack

Pin	Signal	Description
1	AGND	Analog Ground
2	AGND	Analog Ground
3	Y	Brightness Signal
4	C	Chrominance Signal

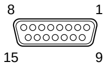
ISDN A jack



Modular jack

Pin	Signal	Description
1	NC	
2	NC	
3	TA	Transmit+
4	RA	Receive+
5	RB	Receive–
6	TB	Transmit–
7	NC	
8	NC	

CAMERA connector (female)



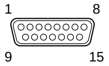
D-sub 15-pin connector

Pin	Signal	Description
1	Y	Brightness signal
2	Y.GND	Brightness signal ground
3	C	Chrominance signal
4	C.GND	Chrominance signal ground
5	GND	Ground
6	GND	Ground
7	TxD	Transmit data
8	RxD	Receive data
9	12V	12V
10	12V	12V
11	GND	Ground

(Continued)

12	SIRCS	Remote control data
13	DTR	Data terminal ready
14	Lock	Lock
15	GND	Ground

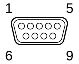
PROCESSOR connector (male)



D-sub 15-pin connector

Pin	Signal	Description
1	Y	Brightness signal
2	Y.GND	Brightness signal ground
3	C	Chrominance signal
4	C.GND	Chrominance signal ground
5	GND	Ground
6	GND	Ground
7	RxD	Receive data
8	TxD	Transmit data
9	12V	12V
10	12V	12V
11	GND	Ground
12	SIRCS	Remote control data
13	DTR	Data terminal ready
14	GND	Ground
15	GND	Ground

AUX CONTROL connector (male)

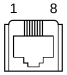


D-sub 9-pin connector

Pin	Signal	Description
1	DCD	Carrier detect
2	RXD	Receive Data
3	TXD	Transmit Data
4	DTR	Data Terminal Ready
5	GND	Ground
6	DSR	Data Set Ready
7	RTS	Request to Send
8	CTS	Send Ready
9	RI	Call

Pin Assignment on Optional Board Connectors

ISDN B/C jacks (PCS-I160)

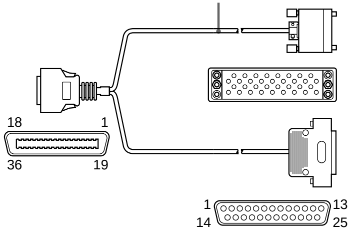


Modular jack

Pin	Signal	Description
1	NC	
2	NC	
3	TA	Transmit+
4	RA	Receive+
5	RB	Receive–
6	TB	Transmit–
7	NC	
8	NC	

V.35 connector (female) (PCS-I161)

PCS-K32 V.35 adapter connector cable



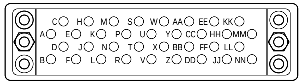
Half-pitch 36-pin connector

Pin	Signal	Description
1	SGND	Signal ground
2	SGND	Signal ground
3	CABLE1	Cable1
4	V35SD+	Send data+
5	V35SD–	Send data–
6	V35RD+	Receive data+
7	V35RD–	Receive data–
8	V35ER	Data terminal ready
9	V35RS	Request to send
10	V35ST+	Transmit Timing+
11	V35ST–	Transmit Timing–
12	V35RT+	Receive Timing+
13	V35RT–	Receive Timing–
14	V35TT+	Send Timing+
15	V35TT–	Send Timing–
16	SGND	Signal ground
17	SGND	Signal ground
18	SGND	Signal ground
19	SGND	Signal ground
20	SGND	Signal ground
21	CABLE2	Cable2
22	V35RI	Call Indication
23	V35DR	Data set ready
24	366DLO	Data line occupied
25	V35CS	Ready to send
26	366ACR	Abandon call
27	366DPR	Number display
28	366CRQ	Call request
29	366PND	Next no. request
30	366NB1	Numerical signal #1 bit
31	366NB2	Numerical signal #2 bit
32	366NB4	Numerical signal #4 bit
33	366NB8	Numerical signal #8 bit
34	SGND	Signal ground
35	SGND	Signal ground
36	SGND	Signal ground

(Continued)

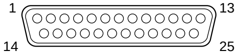
Specifications

CCITT V.35 connector (cable side)



Pin	Signal	Description
A	CGND	Chassis ground
B	SGND	Signal ground
C	V35RS	Request to send
D	V35CS	Clear to send
E	V35DR	Data ready
H	V35ER	Data terminal ready
J	V35RI	Call display
P	V35SD+	Send data+
R	V35RD+	Receive data+
S	V35SD–	Send data–
T	V35RD–	Receive data–
U	V35TT+	Transmit timing+
V	V35RT+	Receive timing+
W	V35TT–	Transmit timing–
X	V35RT–	Receive timing–
Y	V35ST+	Send timing+
AA	V35ST–	Send timing–

D-sub 25-pin connector (cable side)



Pin	Signal	Description
1	SGND	Signal ground
2	366DPR	Number display
3	366ACR	Abandon call
4	366CRQ	Call request
5	366PND	Present next digit
7	SGND	Signal ground
14	366NB1	Numerical signal 0 bit
15	366NB2	Numerical signal 1 bit
16	366NB4	Numerical signal 2 bit
17	366NB8	Numerical signal 3 bit
18	366RC	Receive common
19	SGND	Signal ground
22	366DLO	Data line occupied

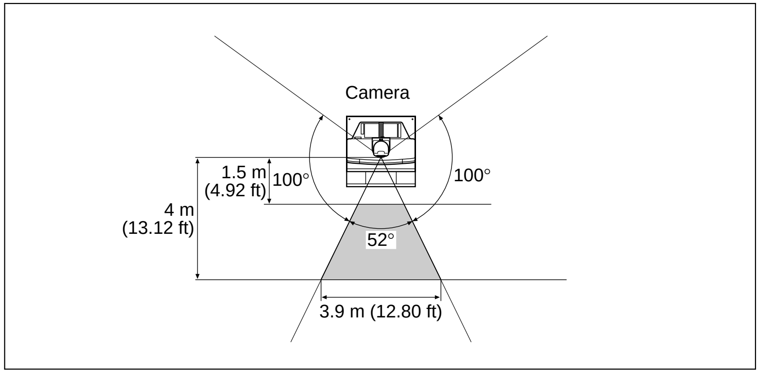
Videomeeting Room Layout

Be sure to position camera and microphone appropriately in your videomeeting room.

Camera Range

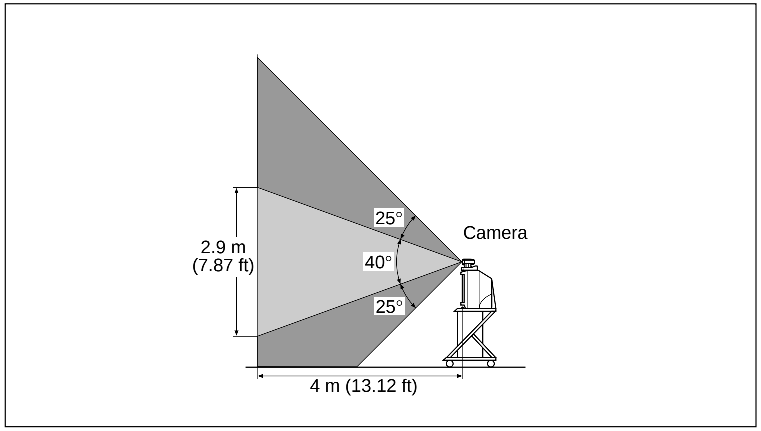
▭ represents the scope of the camera when the zoom has been extended fully. ▨ indicates the scope of the camera when the left/right angling function is fully utilized. Use the measurements below as a guide for the layout of your videomeeting room.

Top view (horizontal range at maximum zoom-out)



Videomeeting Room Layout

Side view (vertical range at maximum zoom-out)

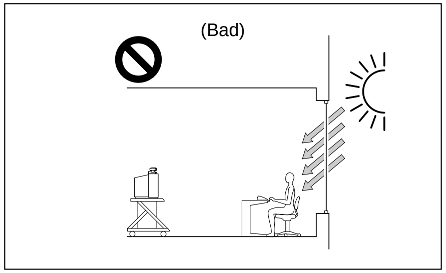


Layout Considerations

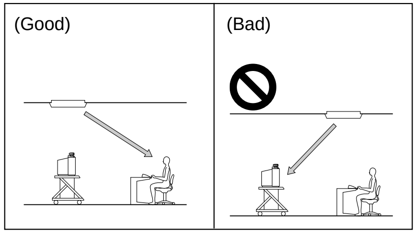
- Avoid allowing large, moving objects, especially people behind the participants; the quality of the local transmission will deteriorate.
- Do not seat participants with fine line patterns in front of a wall.
- Choose a place which is echo-free.
- Do not install the system near noise sources such as air conditioners or copy machines.
- Avoid placing the system in a room where there are speakers used for an in-house broadcasting system.

Lighting Considerations

Do not point the camera towards a window as back lighting may wash out the contrast. Cover any windows with a thick curtain.



Adjust room lighting so that it falls on the participants. Avoid direct light on the TV monitor. Light intensity on faces should be about 300 lux or more.



If an inverter type or brightness-adjustable type of fluorescent lamp is used, the sensitivity of the Remote Commander may deteriorate.

http://getMANUAL.com

Glossary

Bonding
An abbreviation for Bandwidth on Demand Interoperability.

BRI
An abbreviation for Basic Rate Interface. Single ISDN has two B-channels and one D-channel.

CIF
An abbreviation for Common Intermediate Format. This format allows to communicate with between different color systems (NTSC or PAL).
352 pixels × 288 lines

Codec
An abbreviation for Coder-Decoder. An electronic device that converts an analog signal (such as voice or video) to a digital data stream, compresses it, and sends it over a digital communications line. Another codec reverses the process at the receiving end.

DHCP
An abbreviation for Dynamic Host Configuration Protocol. Manages IP addresses in the network.

DNS
An abbreviation for Domain Name System.

Echo
Reflection of sound from walls and other surrounding objects.

Frame rate
The number of frames which can be encoded/decoded in one second.

G.711
Pulse code modulation (PCM) of voice frequencies.

G.722
7 kHz audio-coding within 64 Kbps.

G.723.1
5.3 or 6.3 kHz audio-coding within 32 Kbps.

G.728
Coding of speech at 16 Kbps using low-delay code excited linear prediction.

Gatekeeper
Controls the access of H.323 videoconference devices on a network. Administers the zone, access limitation, audio/video bandwidth, and alias etc.

H.221
Frame structure for a 64 to 1920 Kbps channel in audiovisual teleservices.

H.261
Video codec for audiovisual services as p × 64 Kbps.

H.263
This is basically based on H.261, however, this enables communication using via a lower bit rate.

H.320
Narrow-band visual telephone systems and terminal equipment.

H.323
This enables communications with the H.320 terminal on the non-QOS (Quality of Service) LAN.

Interface
A device that goes between two different devices so that they can communicate with each other.

I-MUX
An abbreviation for Inverse Multiplexer. This protocol allows you to transmit the data at 384 Kbps via 6B-channel.

ISDN
An acronym for Integrated Services Digital Network. This is a communications protocol by CCITT on transmission of integrated voice, video, and data. Bandwidths include basic (64 Kbps) and primary rate (1.544 and 2.048 Mbps).

ITU-T
An abbreviation for International Telecommunication Union, Telecommunications.

Lip synchronization
A function that synchronizes sound with motion. Sound processing is much faster than motion processing, thus sound and motion sometimes get out of step with each other.

MCU
An abbreviation for Multipoint Control Unit. When connecting a MCU, a multipoints meeting can be held.

PBX
An abbreviation for Private Branch eXchange.

P in P
An abbreviation for “Picture in Picture.” This is a function which allows the user, to monitor their own party on a small window on the TV monitor.

QCIF
An abbreviation for Quater CIF. The number of pixels is a quarter than one of CIF format.
176 pixels × 144 lines

SNMP
An abbreviation for Simple Network Management Protocol. This protocol is for management information between the management station and the managed terminals.

SPID
An abbreviation for Service Profile ID.

Still picture
Still, unmoving pictures, as in a photograph.

Sub-address
An identification number given to devices sharing a common ISDN line .

Terminal adaptor
A device used to connect various equipment to a digital line. The device sits between the equipment and the digital line and checks that signals are correctly sent or received.

V.35
This interface is frequently used for data communication since this transmits data at high speed.

Sony Corporation Printed in Japan

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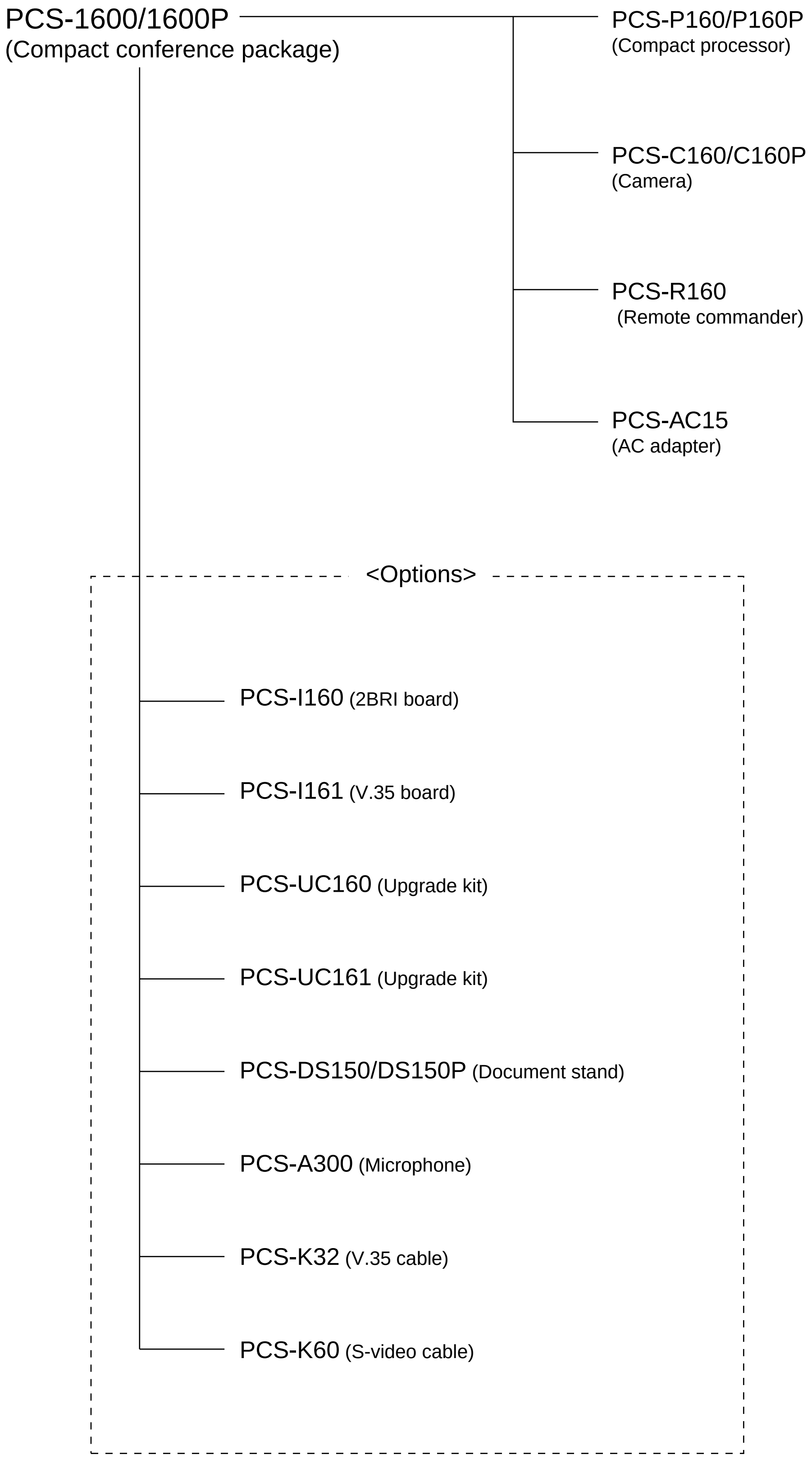
Printed on recycled paper

Section 2
Service Overview

2-1. System Configuration

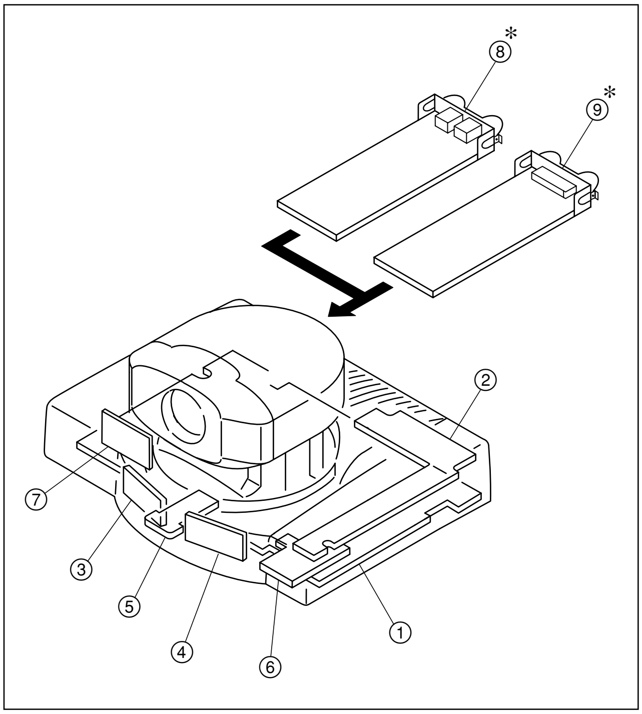

PCS-1600/1600P
(Compact conference package)
PCS-P160/P160P
(Compact processor)
PCS-C160/C160P
(Camera)
PCS-R160
(Remote commander)
PCS-AC15
(AC adapter)
<Options>
PCS-I160 (2BRI board)
PCS-I161 (V.35 board)
PCS-UC160 (Upgrade kit)
PCS-UC161 (Upgrade kit)
PCS-DS150/DS150P (Document stand)
PCS-A300 (Microphone)
PCS-K32 (V.35 cable)
PCS-K60 (S-video cable)

2-2. List of Required Measuring Equipment and Tools

Measuring equipment and tools	Type
Composite video signal generator with S-output	Sony Tektronix TSG-130 or equivalent
Oscilloscope	Sony Tektronix 2465B or equivalent
Video monitor	Sony Tektronix BVM-1410 or equivalent
Composite waveform monitor/vector scope	Sony Tektronix 1750 or equivalent
IBM* personal computer	
Handycam supporting the laser AV link	DCR-TRV900/TRV10/TRV9/TRV310K/TRV110K/TRV66K, HSA-IF1
16MB memory stick	
S-BNC video cable	Part No. J-6381-380-A
RS-232C cross cable	_
ISDN cable	_
V.35 cable	PCS-K32

∗ : IBM is a trademark of IBM Corporation.

2-3. Board Layout Diagram



Board Configuration

	Board Name	Main function
①	MA-107/107P board	MAIN board
②	DE-55 board	Demodulator board
③	IPM-92A board	IR receiver board
④	IPM-93A board	IR receiver board
⑤	RX-47A board	Remote receiver board
⑥	CN-2143 board	Connecter board
⑦	EX-816 board	Extention board
⑧	∗IF-823 board (2BRI board)	Interface board
⑨	∗IF-824 board (V.35 board)	Interface board

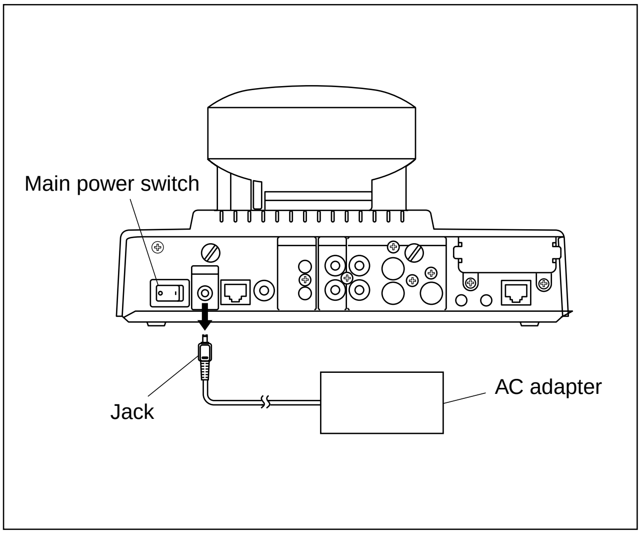
∗ : Optional board

2-4. Removing the Cabinets

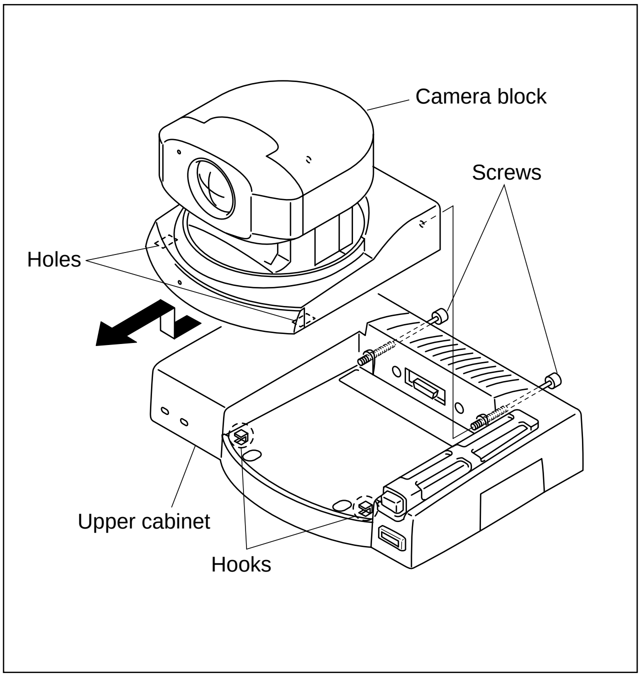
2-4-1. Upper Cabinet

Note

To protect the inside of the unit from damage, be sure to turn off the main power, remove the AC adapter jack, and perform the following procedure.


Main power switch
AC adapter
Jack

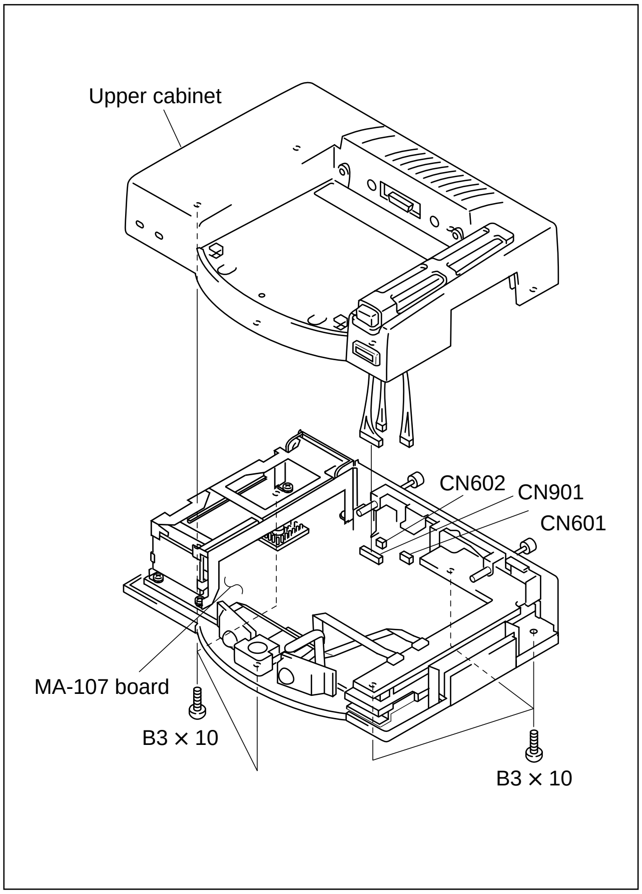
1. When the optional board is installed to the unit, remove it. (Refer to " Sec.2-5-3. Optional board".)
2. Loosen the two camera retaining screws of the upper cabinet. Slide the camera block in the direction of the arrow while raising up it and remove it from the hook of the upper cabinet.


Camera block
Screws
Holes
Upper cabinet
Hooks

3. Remove the six screws (B3 × 10) and remove the upper cabinet.
4. Remove the three connectors (CN601, CN602, CN901) from the MA-107/107P board.

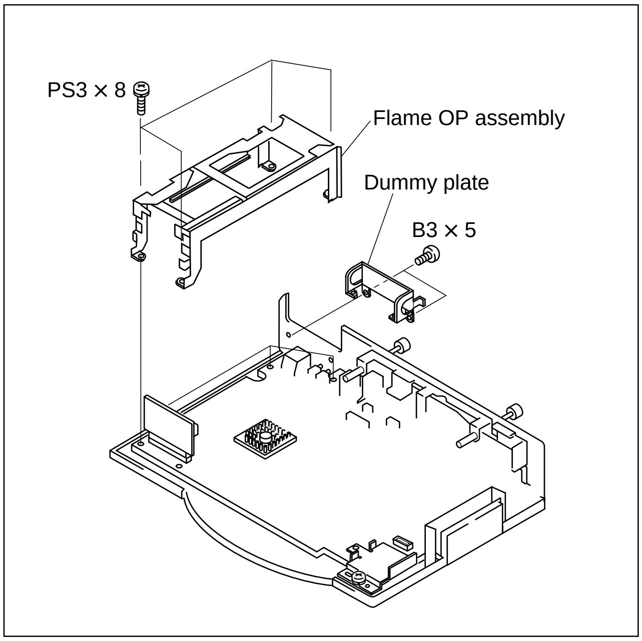
Note

Standard tightening torque : 60 × 10^{-2} N•m {6 kgf•cm}

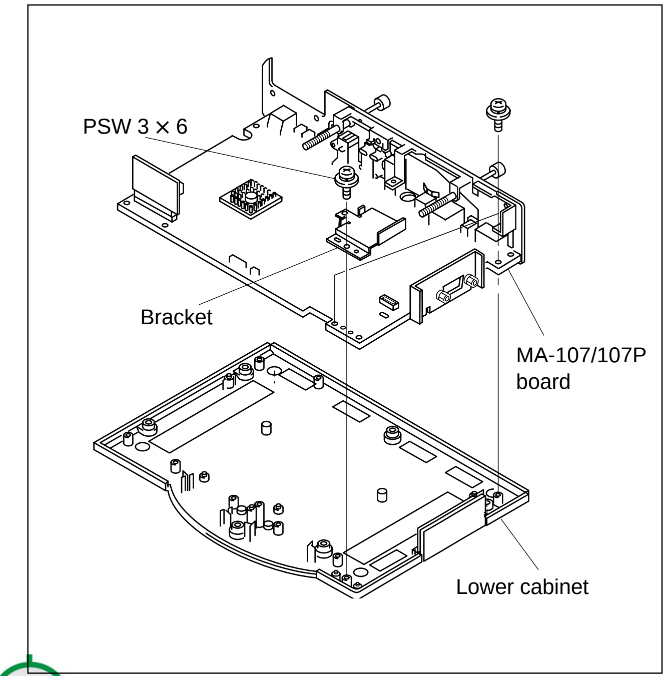

Upper cabinet
CN602
CN901
CN601
MA-107 board
B3 × 10
B3 × 10

2-4-2. Lower Cabinet

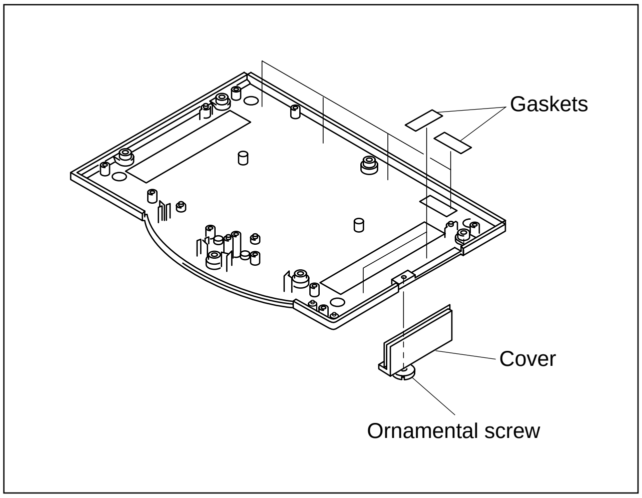
1. Remove the upper cabinet.
   (Refer to Section “2-4-1. Removing the Upper cabinet”.)
2. Remove the RX-47A board.
   (Refer to Section “2-5-4. RX-47A board”.)
3. Remove the IPM-92A board.
   (Refer to Section “2-5-5. IPM-92A board”.)
4. Remove the IPM-93A board.
   (Refer to Section “2-5-6. IPM93A board”.)
5. Remove the DE-55 board.
   (Refer to Section “2-5-7. DE-55 board”.)
6. Remove the CN-2143 board.
   (Refer to Section “2-5-8. CN-2143 board”.)
7. Remove the two screws (B3 × 5) and remove the dummy plate.
8. Remove the four screws (PS3 × 8) and remove the frame OP assembly.


PS3 × 8
Flame OP assembly
Dummy plate
B3 × 5

9. Remove the one screw (PSW3 × 6) and remove the bracket.
10. Remove the two screws (PSW3 × 6) and remove the MA-107/107P board.


PSW 3 × 6
Bracket
MA-107/107P board
Lower cabinet

11. Remove the ornamental screw (with stopper ring) and remove the cover.


Gaskets
Cover
Ornamental screw

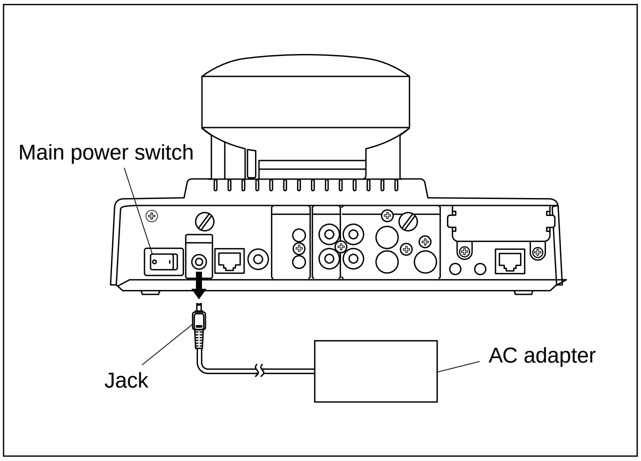
Note

When replacing the bottom cabinet, make sure obtains the two gaskets with the bottom cabinet at the same time, then replace them.

2-5. Replacing the Main Parts

Note

To protect the inside of the unit from damage, be sure to turn off the main power, remove the AC adapter jack, and perform the following procedure.


Main power switch
Jack
AC adapter

2-5-1. Speaker

Replacement Part

Part name : speaker
Part number : 1-505-156-11

Replacement Procedure

1. Remove the upper cabinet. (Refer to Section “2-4-1. Removing the Upper cabinet”.)
2. Open the upper cabinet in the direction of the arrow and remove the harness from the harness retainer.

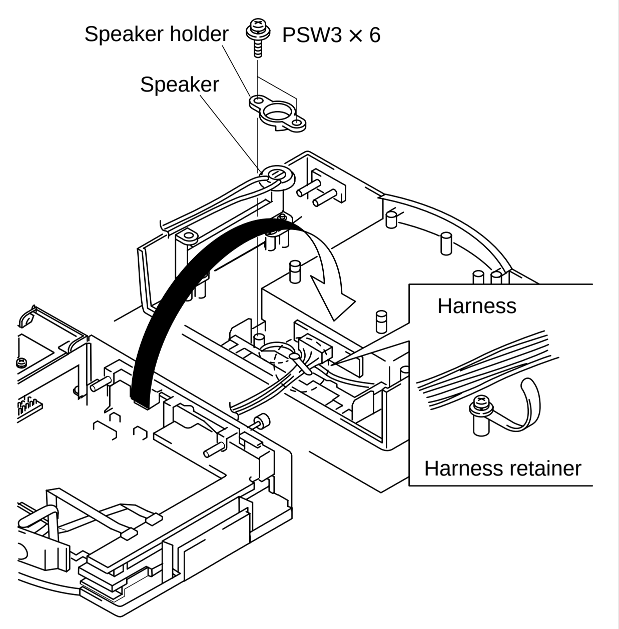
   Note

   Place a sheet under the cabinet to protect it.

3. Remove the two screws (PSW3 × 6), and remove the speaker holder and the speaker.
4. Attach the new speaker by reversing the disassembling procedure of steps 1 to 3.

Note

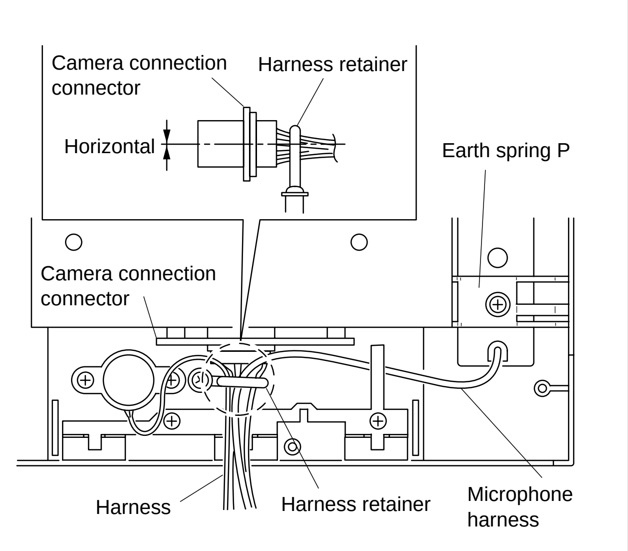
Standard tightening torque : 60×10^{-2} N•m {6 kgf•cm}


Speaker holder
PSW3 × 6
Speaker
Harness
Harness retainer

Precaution for installation of the speaker

Be careful of the followings when fixing the harness using the harness retainer as shown.

1. Be cause the built-in microphone is a high sensitivity microphone, the microphone can pick up vibrations of the PCS-1600/1600P via microphone harness.
   Be sure to give a small amount of play to the microphone harness when fixing the harness with the harness retainer.
2. The camera connection connector as shown is fixed with some play in order that the connector can be easily connected to the camera block.
   Adjust the harness retainer after the harness is fixed with the harness retainer, so that the camera connecting connector becomes level.


Camera connection connector
Harness retainer
Horizontal
Earth spring P
Camera connection connector
Harness
Harness retainer
Microphone harness

2-5-2. Microphone

Replacement Part

Part name : microphone
Part number : 1-542-401-12

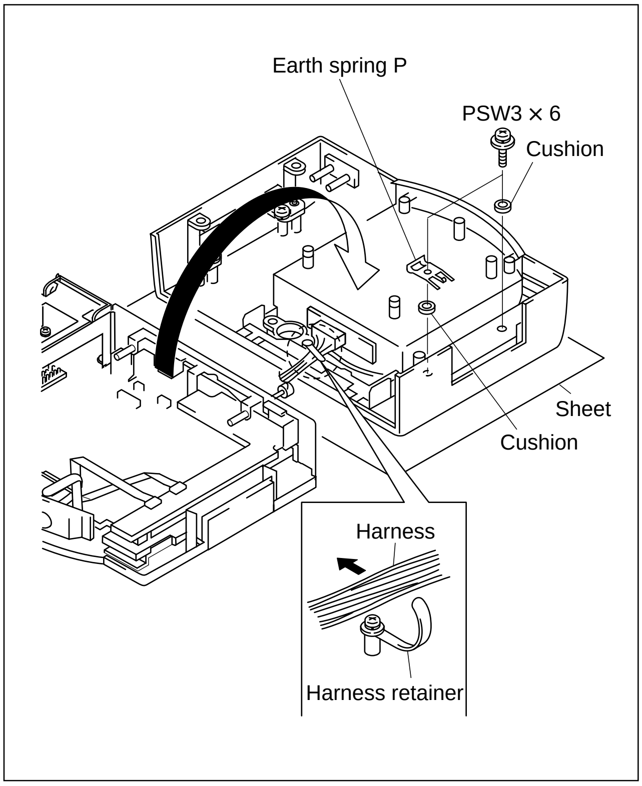
Replacement Procedure

1. Remove the upper cabinet. (Refer to Section “2-4-1. Removing the Upper cabinet”.)
2. Turn over the upper cabinet and remove the harness from the harness retainer.

   Note

   Place a sheet under the cabinet to protect it.

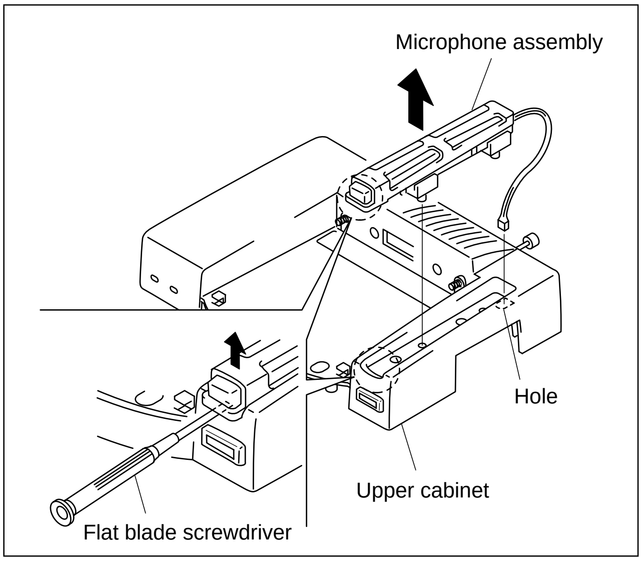
3. Remove the two screws (PSW3 × 6) and earth spring P, and remove the cushion.


Earth spring P
PSW3 × 6
Cushion
Sheet
Cushion
Harness
Harness retainer

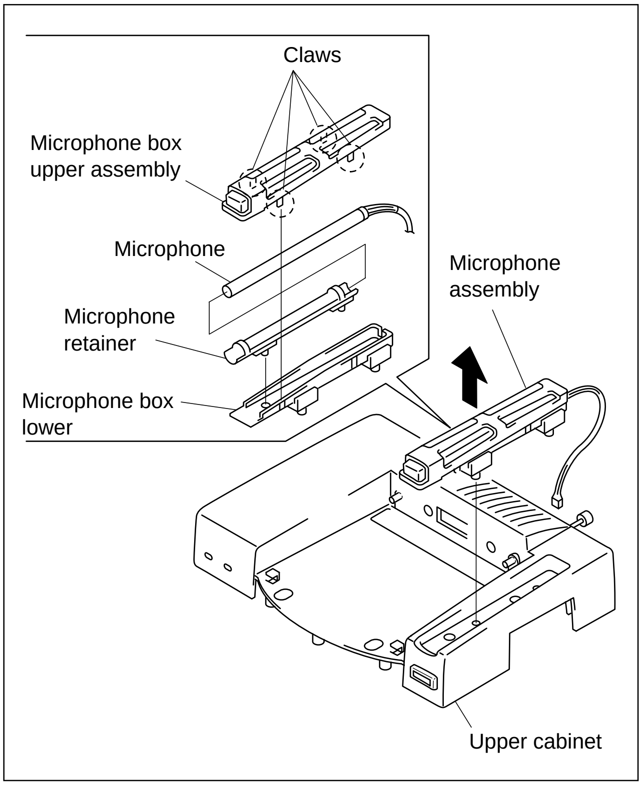
4. Turn the upper cabinet so that it faces upwards. Remove the microphone assembly and remove the harness from the hole.

   Note

   If the microphone assembly cannot be removed easily, push up it with a flat blade screwdriver.


Microphone assembly
Hole
Upper cabinet
Flat blade screwdriver

5. Unlock the four claws of the microphone box upper assembly from the bottom of the microphone box.
6. Remove the microphone from the bottom of the microphone box.
7. Remove the microphone from the microphone retainer.


Claws
Microphone box upper assembly
Microphone
Microphone retainer
Microphone box lower
Microphone assembly
Upper cabinet

8. Attach the new microphone by reversing the disassembling procedure of steps 1 to 7.

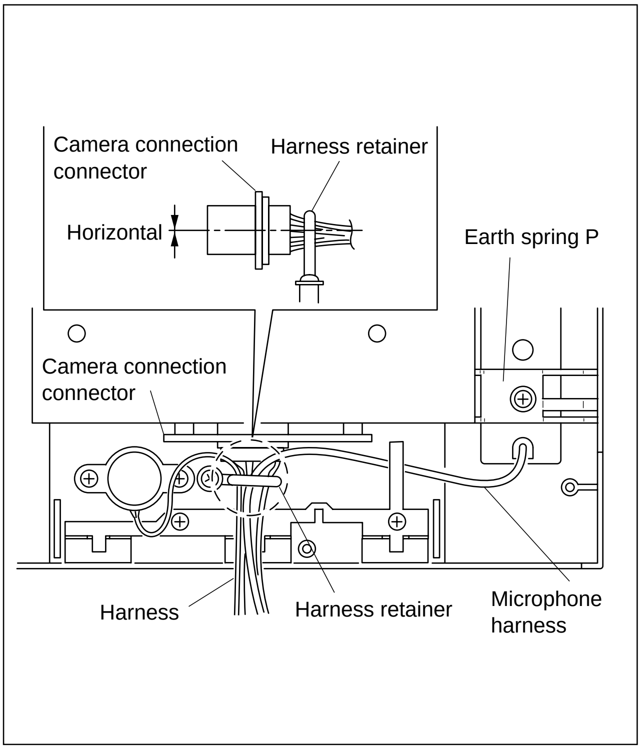
Note

Standard tightening torque : 60×10^{-2} N•m {6 kgf•cm}

Precaution for installation of the microphone

Be careful of the followings when fixing the harness using the harness retainer as shown.

1. Be cause the built-in microphone is a high sensitivity microphone, the microphone can pick up vibrations of the PCS-1600/1600P via microphone harness.
   Be sure to give a small amount of play to the microphone harness when fixing the harness with the harness retainer.
2. The camera connection connector as shown is fixed with some play in order that the connector can be easily connected to the camera block.
   Adjust the harness retainer after the harness is fixed with the harness retainer, so that the camera connecting connector becomes level.


Camera connection connector
Harness retainer
Horizontal
Earth spring P
Camera connection connector
Harness
Harness retainer
Microphone harness

2-5-3. Optional Boards

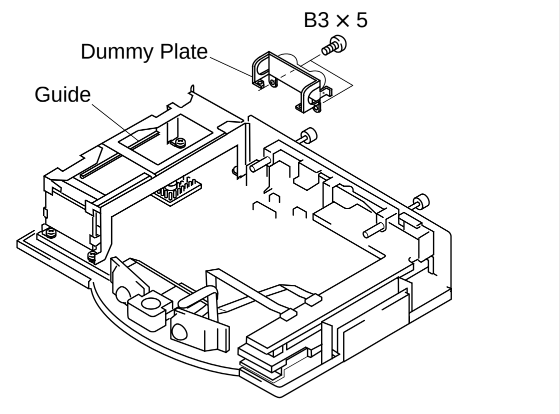
Please place an order for the following optional boards in case the optional board needs to be replaced.

Ordering Parts

IF-823 board : PCS-I160 (2BRI board)
IF-824 board : PCS-I161 (V.35 board)

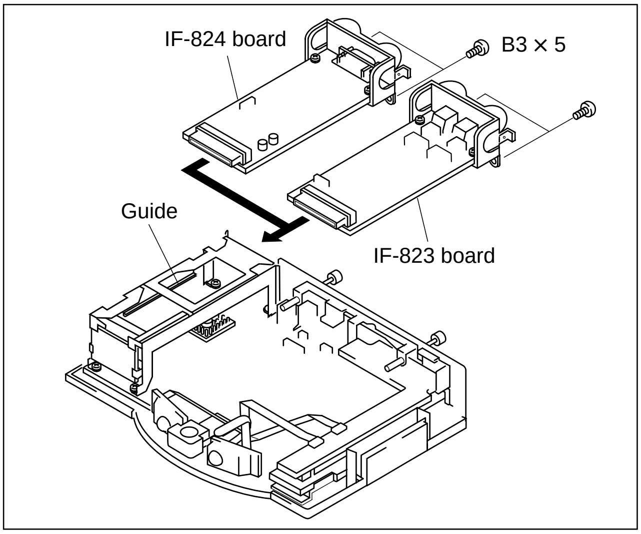
Replacement Procedure

1. Remove the two screws (B3 × 5) and remove the dummy plate.
2. Insert the optional board into the unit along with the guide.
3. After fully inserting the optional board until it goes to inner part, fix this board to the unit using the two screws (B3 × 5) that removed in Step 1 or attached to the PCS-I16X.


B3 × 5
Dummy Plate
Guide

Note

- For the purpose of explaining, upper cabinet is removed on the illustration. But, it need not be removed actuality.
- Attach the IF-823 board and the IF-824 board in the same way.


IF-824 board
B3 × 5
Guide
IF-823 board

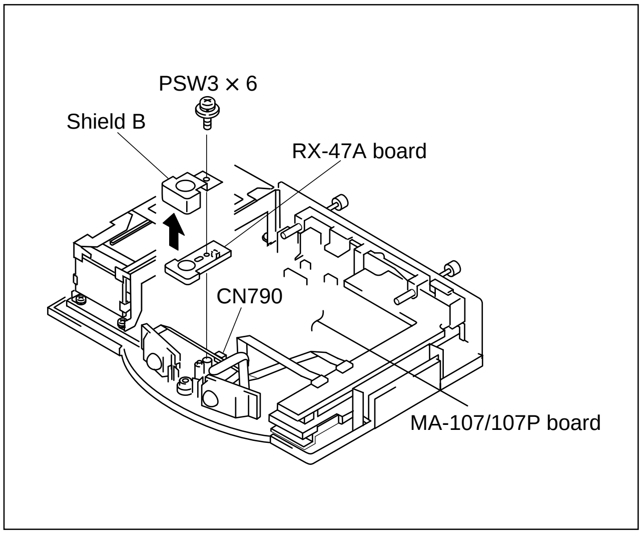
2-5-4. RX-47A Board

Replacement Part

Part name : RX-47A board
Part number : A-8327-106-A

Replacement Procedure

1. Remove the upper cabinet. (Refer to Section “2-4-1. Removing the Upper cabinet”.)
2. Remove the screws fixing the RX-47A board that is connected to the MA-107/107P board.
3. Remove the shield B.
4. Remove the RX-47A board that is connected to the CN790 on the MA-107/107P board.



5. Attach the new RX-47A board by reversing the disassembling procedure of steps 1 to 3.

Note

Standard tightening torque : 60 × 10^{-2} N•m {6 kgf•cm}

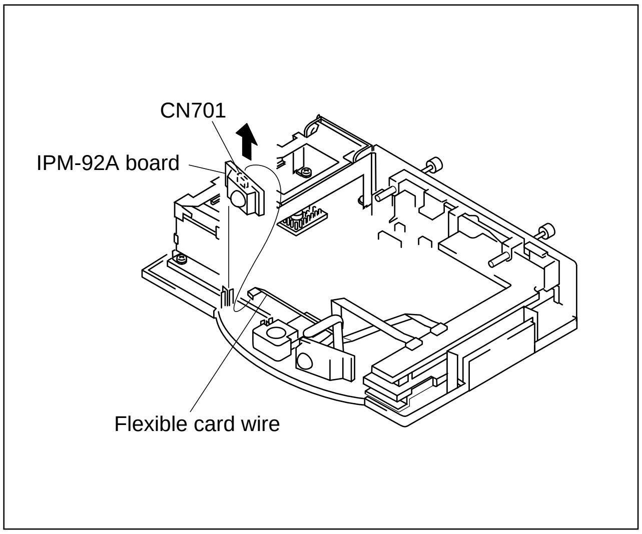
2-5-5. IPM-92A Board

Replacement Part

Part name : IPM-92A board
Part number : A-8327-096-A

Replacement Procedure

1. Remove the upper cabinet. (Refer to Section “2-4-1. Removing the Upper cabinet”.)
2. Remove the flexible card wire from the connector CN701 on the IPM-92A board, and remove the IPM-92A board.



3. Attach the new IPM-92A board by reversing the disassembling procedure of steps 1 and 2.

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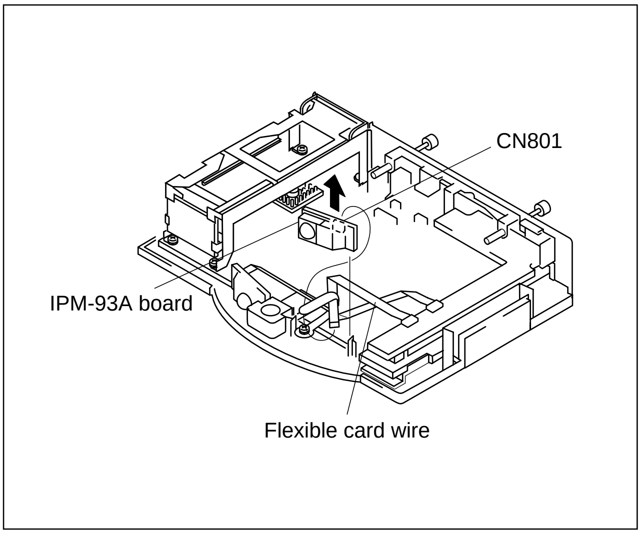
2-5-6. IPM-93A Board

Replacement Part

Part name : IPM-93A board
Part number : A-8327-097-A

Replacement Procedure

1. Remove the upper cabinet. (Refer to Section "2-4-1. Removing the Upper cabinet".)
2. Remove the flexible card wire from the connector CN801 on the IPM-93A board, and remove the IPM-93A board.


CN801
IPM-93A board
Flexible card wire

3. Attach the new IPM-93A board by reversing the disassembling procedure of steps 1 and 2.

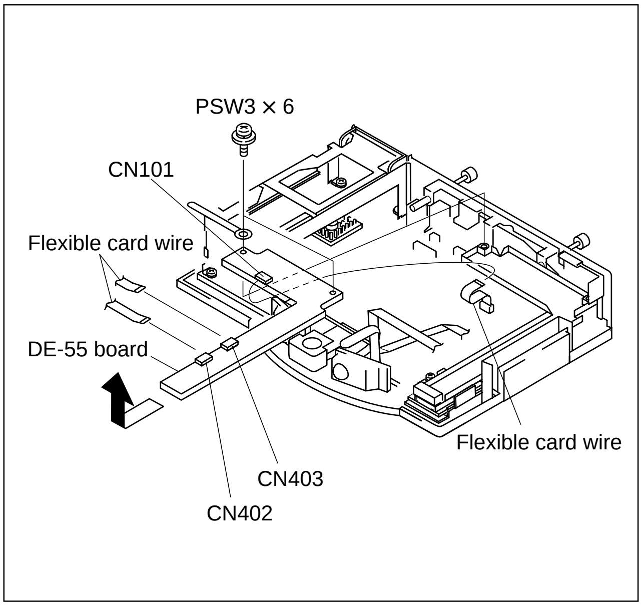
2-5-7. DE-55 Board

Replacement Part

Part name : DE-55 board
Part number : A-8327-095-A

Replacement Procedure

1. Remove the upper cabinet. (Refer to Section "2-4-1. Removing the Upper cabinet".)
2. Remove the flexible card wire from the three connectors (CN101, CN402, CN403) on the DE-55 board.
3. Remove the two screws (PSW3 × 6) and remove the DE-55 board in the direction of the arrow.


PSW3 × 6
CN101
Flexible card wire
DE-55 board
Flexible card wire
CN403
CN402

4. Attach the new DE-55 board by reversing the disassembling procedure of steps 1 to 3.

Note

Standard tightening torque : 60×10^{-2} N•m {6 kgf•cm}

Note

When the board is removed, be careful not to damage the chassis or other parts.

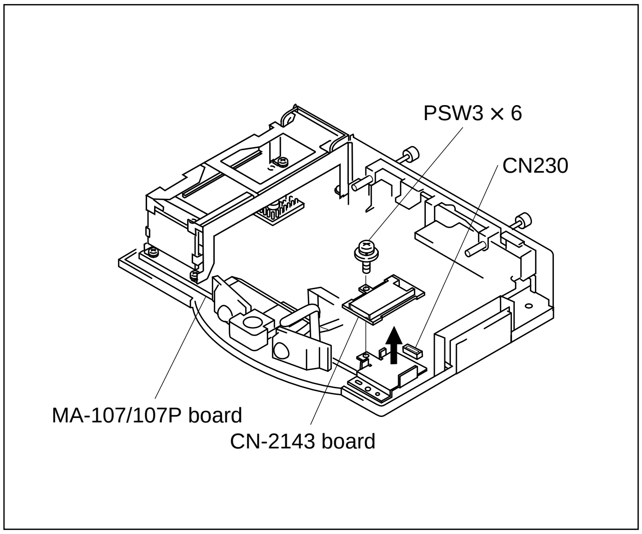
2-5-8. CN-2143 Board

Replacement Part

Part name : CN-2143 board
Part number : A-8327-102-A

Replacement Procedure

1. Remove the upper cabinet. (Refer to Section “2-4-1. Removing the Upper cabinet”.)
2. Remove the DE-55 board. (Refer to Section “2-5-7. DE-55 board”.)
3. Remove the one screw (PSW3 × 6) and remove the CN-2143 board from CN230 on the MA-107/107P board.


PSW3 × 6
CN230
MA-107/107P board
CN-2143 board

4. Replace the new CN-2143 board in the reverse order of steps 1 to 3.

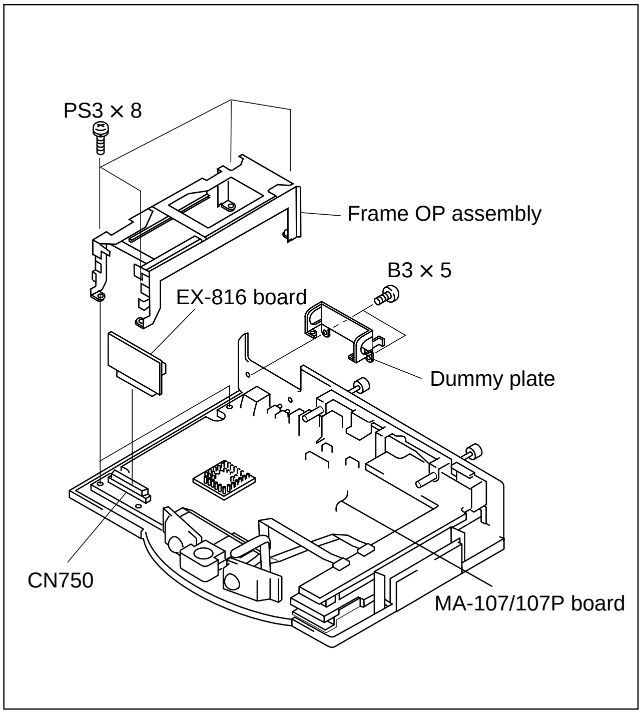
2-5-9. EX-816 Board

Replacement Part

Part name : EX-816 board
Part number : A-8327-101-A

Replacement Procedure

1. Remove the upper cabinet. (Refer to Section “2-4-1. Removing the Upper cabinet”.)
2. Remove the two screws (B3 × 5) and remove the dummy plate.
3. Remove the four screws (PS3 × 8) and remove the frame OP assembly.
4. Remove the EX-816 board from CN750 on the MA-107/107P board.


PS3 × 8
Frame OP assembly
B3 × 5
EX-816 board
Dummy plate
CN750
MA-107/107P board

5. Replace the new EX-816 board in the reverse order of steps 1 to 4.

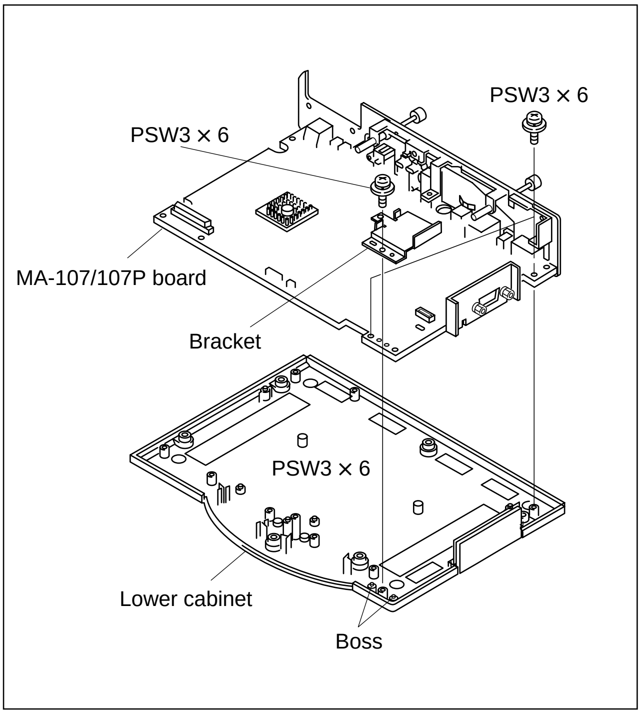
2-5-10. MA-107/107P Board

Replacement Part

Part name : MA-107 board (For NTSC)
MA-107P board (For PAL)
Part number : A-8327-091-A (For NTSC)
A-8327-092-A (For PAL)

Replacement Procedure

1. Remove the upper cabinet.
(Refer to Section "2-4-1. Removing the Upper cabinet".)
2. Remove the RX-47A board.
(Refer to Section "2-5-4. RX-47A Board".)
3. Remove the IPM-92A board.
(Refer to Section "2-5-5. IPM-92A Board".)
4. Remove the IPM-93A board.
(Refer to Section "2-5-6. IPM-93A Board".)
5. Remove the DE-55 board.
(Refer to Section "2-5-7. DE-55 Board".)
6. Remove the CN-2143 board. (Refer to Section "2-5-8. CN-2143 board".)
7. Remove the EX-816 board. (Refer to Section "2-5-9. EX-816 board".)
8. Remove the one screw (PSW3 × 6) and remove the bracket.
9. Remove the two screws (PSW3 × 6) and remove the MA-107/107P board.


PSW3 × 6
PSW3 × 6
MA-107/107P board
Bracket
PSW3 × 6
Lower cabinet
Boss

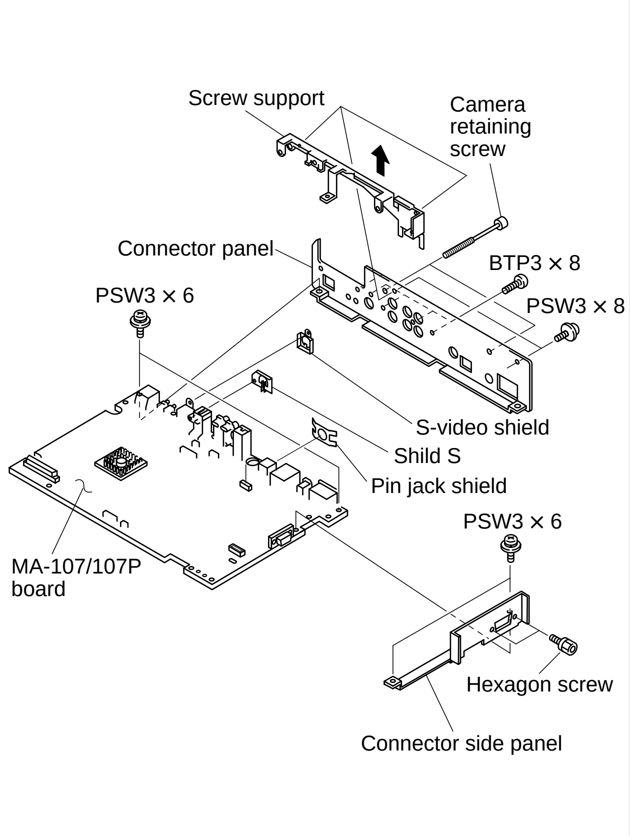
10. Remove the camera retaining screw and two screws (PSW3 × 8), remove the screw supporting bracket toward in arrow direction on the figure.
11. Remove the four tapping screws (BTP3 × 8) and remove the connector panel.
12. Remove the two hexagon screws and two screws (PSW3 × 6), remove the connector side panel.
13. Replace the new MA-107/170P board in the reverse order of steps 1 to 12.

Note

The shield S is attached to the connector CN400 and S-video shield is attached to the CN402 and Pin jack shield is attached to the connector CN603 on the MA-107/107P board. Be careful not to lose them because they are the small parts. When attach the bracket, two setting holes of bracket to the bosses of lower cabinet first and tighten the screw shown in the figure.

Note

PSW3 × 6, 8 : Standard tightening torque :
60×10^{-2} N•m {6 kgf•cm}
BTP3 × 8 : Standard tightening torque:
80×10^{-2} N•m {8 kgf•cm}
Hexagon screw : Standard tightening torque :
60×10^{-2} N•m {6 kgf•cm}


Screw support
Camera retaining screw
Connector panel
BTP3 × 8
PSW3 × 6
PSW3 × 8
S-video shield
Shild S
Pin jack shield
PSW3 × 6
MA-107/107P board
Hexagon screw
Connector side panel

2-5-11. Flexible Card Wire

Replacement Procedure of Horizontal Type Connector

1. Slide the portion marked ✻ in the direction of the arrow, release the lock, and remove the flexible card wire.

   Note

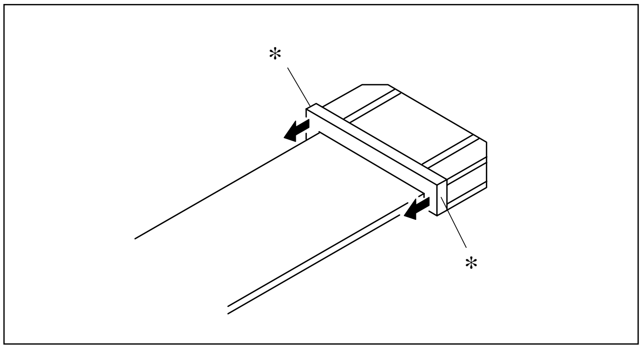
   Be careful not to bend the flexible card wire.

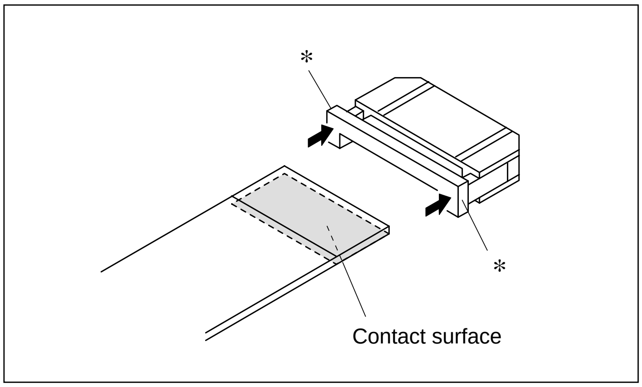
2. Insert the flexible card wire into the connector while being careful about the direction of the contact surface.

3. After inserting it completely, push the portion marked ✻ in the direction of the arrow to fix the flexible card wire.

Note

Be sure to hold both sides of the portion marked ✻.





2-6. Notes on Repair Parts

2-6-1. Notes on Repair Parts

Safety Related Components Warning

WARNING

Components marked ⚠ are critical to safe operation. Therefore, specified parts should be used in the case of replacement.

Section 3
Operating Descriptions

3-1. Overall Function

- Overall Function of Compact Processor (PCS-P160/P160P)

3-1-1. Interface between Devices

The Compact Conference Package PCS-1600/1600P consists of the compact processor (PCS-P160/P160P), camera (PCS-C160/C160P), external microphone (PCS-A300/option) and remote commander (PCS-R160). This section describes the interface between these devices.

1. Interface between compact processor (PCS-P160/P160P) and camera (PCS-C160/C160P): D-sub 15-pin

Power :

The +12 V DC power that is supplied to the compact processor (PCS-P160/P160P) from the AC adapter, is at the same time sent to the camera (PCS-C160/C160P) through a switch and fuse.

Video signal :

The video signal that is created by the camera (PCS-C160/C160P) is input to the compact processor (PCS-P160/P160P) in the form of a YC video signal.

VISCA signal :

The setup and operation of the camera (PCS-C160/C160P) are controlled from the compact processor (PCS-P160/P160P) using the serial VISCA signal. The camera (PCS-C160/C160P) status is also read using the VISCA signal by the compact processor (PCS-P160/P160P).

Note

The Automatic Target Tracking Function is contained by the camera (PCS-C160/C160P) itself; the compact processor (PCS-P160/P160P) sends the setup command only.

SIRCS signal :

The IR receiver of the camera (PCS-C160/C160P) receives the SIRCS signal that is then sent to the compact processor (PCS-P160/P160P) after the carrier component is removed.

Note

Whether the IR receiver of the camera (PCS-C160/C160P) or that of the compact processor (PCS-P160/P160P) is used for receiving the SIRCS signal, is determined by the system configuration and the user setup. (Refer to Operating Instructions.)

LOCK signal :

The LOCK signal is used for the compact processor (PCS-P160/P160P) to recognize whether the camera (PCS-C160/C160P) and the compact processor (PCS-P160/P160P) are connected directly or by using an extension cable.

GND level : Direct connection
Open : Connection using an extension cable

2. Interface between compact processor (PCS-P160/P160P) and remote commander (PCS-R160): Infrared ray

The IR receiver on the front panel of the compact processor (PCS-P160/P160P) receives the SIRCS signal that is transmitted from the remote commander (PCS-R160).

Note

Whether the IR receiver of the camera (PCS-C160/C160P) or that of the compact processor (PCS-P160/P160P) is used for receiving the SIRCS signal, is determined by the system configuration and the user setup. (Refer to Operating Instructions.)

3. Interface between camera (PCS-C160/C160P) and remote commander (PCS-R160) : Infrared ray

The IR receiver on the front panel of the camera (PCS-C160/C160P) receives the SIRCS signal that is transmitted from the remote commander (PCS-R160). The SIRCS signal is then sent to the compact processor (PCS-P160/P160P) after the carrier component is removed.

Note

Whether the IR receiver of the camera (PCS-C160/C160P) or that of the compact processor (PCS-P160/P160P) is used for receiving the SIRCS signal, is determined by the system configuration and the user setup. (Refer to Operating Instructions.)

4. Interface between compact processor (PCS-P160/P160P) and external microphone (PCS-A300/option): Mini-jack

Power :

Power of about 2.9 V DC is supplied to an external microphone (PCS-A300) from the compact processor (PCS-P160/P160P). (Plug-in Power)

Audio signal :

The audio signal of −33 dBs from external microphone is input to the compact processor (PCS-P160/P160P).

3-1-2. Function of Compact Processor (PCS-P160/P160P)

1. User interface functions

- LED display of operating status
- Receiving and decoding of the SIRCS signal from the remote commander (PCS-R160)
- Generation and output of the menu display
- Input and selection of video signals
- Receiving and demodulation of infrared video signals (AV-Link)
- Output of the video signals
- Input and selection of audio signals
- Pick-up of sound by the built-in microphone
- Output of the audio signals
- Generation and output of the ringer and other sounds
- Control of the camera (PCS-C160/C160P)
- Generation and output of the SIRCS signal for monitor control
- Data reading/writing of the memory stick
- Control from external equipment depend on serial interface and LAN interface

2. Communication functions

- Compression and coding of input video signals
- Compression and coding of input audio signals
- Generation of the remote terminal control data
- Multiplexing of video, audio and T.120 input data, and creation of transmission frame before sending out to line
- Control of lines (ISDN, V.35) and data transmitting/receiving
- LAN (100 BASE-TX, 10 BASE-T) interface control and data transmitting/receiving
- Frame detection and separation from the received data from the line
- Execution of the control data that is supplied from the remote terminal
- Decoding and decompression of audio data
- Decoding and decompression of video data
- Cancellation of audio echo

3-1-3. Function of Respective Boards

- IPM-92A board, IPM-93A board
  Receives the infrared video signal (AV-Link)
- DE-55 board
  Demodulates the infrared video signal (AV-Link)
- RX-47A board
  Receives the SIRCS signal that is supplied from the remote commander (PCS-R160)
- CN-2143 board
  Connector for memory stick
- EX-816 board
  Relay board between the MA-107/107P board and optional board
- IF-823 board (PCS-I160/option) or IF-824 board (PCS-I161/option)
  Controls the line (ISDN 4B expansion or V.35) and data transmitting/receiving
- MA-107/107P board
  All other functions

Block diagram of the compact processor (PCS-P160/P160P) is shown in Fig. 3-1. Frame diagram of the compact processor (PCS-P160/P160P) is shown in Fig. 3-2.

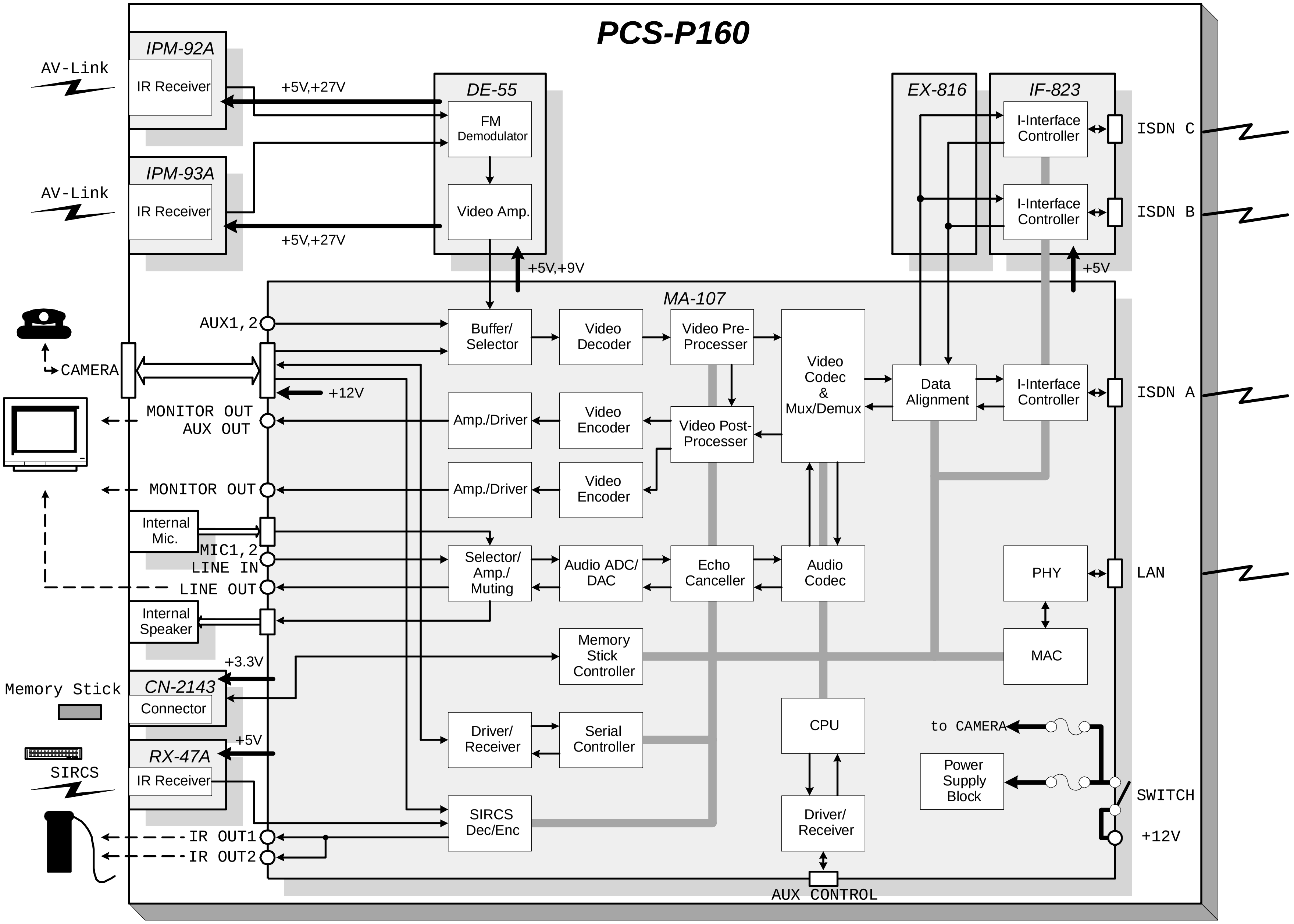

PCS-P160
IPM-92A
IR Receiver
AV-Link
IPM-93A
IR Receiver
AV-Link
+5V,+27V
+5V,+27V
DE-55
FM Demodulator
Video Amp.
+5V,+9V
EX-816
IF-823
I-Interface Controller
I-Interface Controller
ISDN C
ISDN B
+5V
MA-107
AUX1,2
CAMERA
+12V
MONITOR OUT
AUX OUT
MONITOR OUT
Internal Mic.
MIC1,2
LINE IN
LINE OUT
Internal Speaker
+3.3V
Memory Stick
CN-2143
Connector
+5V
RX-47A
IR Receiver
SIRCS
IR OUT1
IR OUT2
Buffer/ Selector
Video Decoder
Video Pre-Processer
Video Codec & Mux/Demux
Data Alignment
I-Interface Controller
ISDN A
Amp./Driver
Video Encoder
Video Post-Processer
Amp./Driver
Video Encoder
Selector/ Amp./ Muting
Audio ADC/ DAC
Echo Canceller
Audio Codec
PHY
LAN
MAC
Memory Stick Controller
Driver/ Receiver
Serial Controller
CPU
to CAMERA
Power Supply Block
SWITCH
+12V
SIRCS Dec/Enc
Driver/ Receiver
AUX CONTROL

Fig. 3-1 PCS-P160/P160P Block Diagram

PWBs Connection of PCS-P160

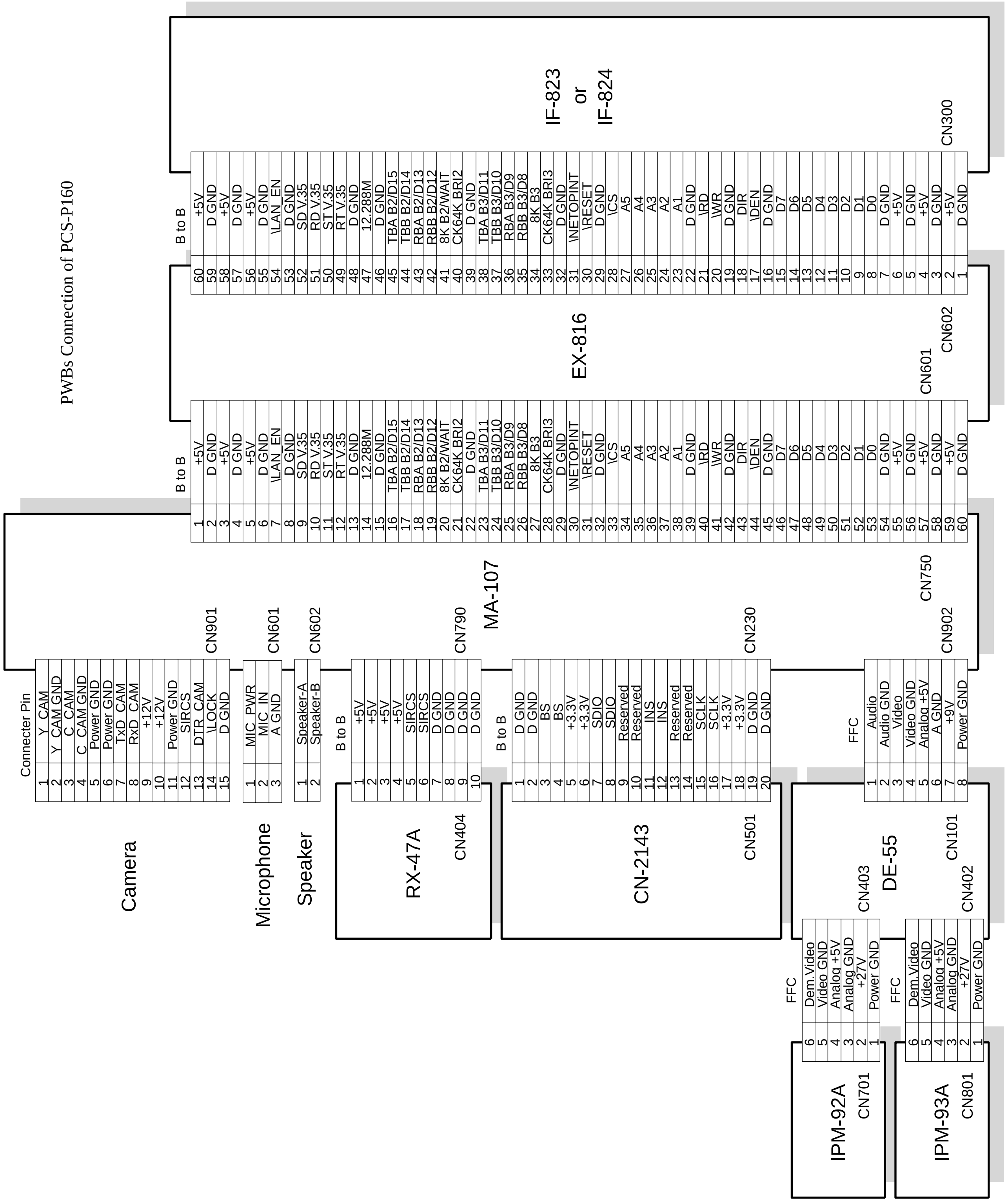

IF-823
or
IF-824
CN300
B to B
60 +5V
59 D GND
58 +5V
57 D GND
56 +5V
55 D GND
54 \LAN_EN
53 D GND
52 SD V.35
51 RD V.35
50 ST V.35
49 RT V.35
48 D GND
47 12.288M
46 D GND
45 TBA B2/D15
44 TBB B2/D14
43 RBA B2/D13
42 RBB B2/D12
41 8K B2/WAIT
40 CK64K BRI2
39 D GND
38 TBA B3/D11
37 TBB B3/D10
36 RBA B3/D9
35 RBB B3/D8
34 8K B3
33 CK64K BRI3
32 D GND
31 \NETOPINT
30 \RESET
29 D GND
28 \CS
27 A5
26 A4
25 A3
24 A2
23 A1
22 D GND
21 \RD
20 \WR
19 D GND
18 DIR
17 \DEN
16 D GND
15 D7
14 D6
13 D5
12 D4
11 D3
10 D2
9 D1
8 D0
7 D GND
6 +5V
5 D GND
4 +5V
3 D GND
2 +5V
1 D GND
EX-816
CN602
CN601
B to B
1 +5V
2 D GND
3 +5V
4 D GND
5 +5V
6 D GND
7 \LAN_EN
8 D GND
9 SD V.35
10 RD V.35
11 ST V.35
12 RT V.35
13 D GND
14 12.288M
15 D GND
16 TBA B2/D15
17 TBB B2/D14
18 RBA B2/D13
19 RBB B2/D12
20 8K B2/WAIT
21 CK64K BRI2
22 D GND
23 TBA B3/D11
24 TBB B3/D10
25 RBA B3/D9
26 RBB B3/D8
27 8K B3
28 CK64K BRI3
29 D GND
30 \NETOPINT
31 \RESET
32 D GND
33 \CS
34 A5
35 A4
36 A3
37 A2
38 A1
39 D GND
40 \RD
41 \WR
42 D GND
43 DIR
44 \DEN
45 D GND
46 D7
47 D6
48 D5
49 D4
50 D3
51 D2
52 D1
53 D0
54 D GND
55 +5V
56 D GND
57 +5V
58 D GND
59 +5V
60 D GND
MA-107
CN750
CN901
CN601
CN602
CN790
CN230
CN902
Connecter Pin
1 Y_CAM
2 Y_CAM GND
3 C_CAM
4 C_CAM GND
5 Power GND
6 Power GND
7 TxD_CAM
8 RxD_CAM
9 +12V
10 +12V
11 Power GND
12 SIRCS
13 DTR_CAM
14 \LOCK
15 D GND
Camera
1 MIC_PWR
2 MIC_IN
3 A GND
Microphone
1 Speaker-A
2 Speaker-B
Speaker
B to B
1 +5V
2 +5V
3 +5V
4 +5V
5 SIRCS
6 SIRCS
7 D GND
8 D GND
9 D GND
10 D GND
RX-47A
CN404
B to B
1 D GND
2 D GND
3 BS
4 BS
5 +3.3V
6 +3.3V
7 SDIO
8 SDIO
9 Reserved
10 Reserved
11 INS
12 INS
13 Reserved
14 Reserved
15 SCLK
16 SCLK
17 +3.3V
18 +3.3V
19 D GND
20 D GND
CN-2143
CN501
FFC
1 Audio
2 Audio GND
3 Video
4 Video GND
5 Analog +5V
6 A GND
7 +9V
8 Power GND
DE-55
CN101
CN403
CN402
FFC
6 Dem.Video
5 Video GND
4 Analog +5V
3 Analog GND
2 +27V
1 Power GND
IPM-92A
CN701
FFC
6 Dem.Video
5 Video GND
4 Analog +5V
3 Analog GND
2 +27V
1 Power GND
IPM-93A
CN801

Fig. 3-2 PCS-P160/P160P Frame

3-2. Circuit Description of the Respective Boards

3-2-1. Overall Function of MA-107/107P Board

The MA-107/107P board has the functions of all operations of the PCS-1600/1600P system except for receiving and demodulation of the infrared video signal (AV-Link), receiving of the SIRCS signal from the remote commander, the optional BRI 4B and V. 35 interface. Most of the external input/output connectors are attached to the MA-107/107P board directly. The block diagram of the MA-107/107P board is shown in Fig. 3-3.

Dividing the MA-107/107P board into functional blocks

The MA-107/107P board circuit can be divided into the following blocks (refer to Fig. 3-4).

CPU block:

The CPU block consists of the CPU, Flash Memories, SDRAMs, system/bus control circuit, buffers, AUX Control port line driver/receiver and camera control line driver/receiver. It controls the entire circuit of the PCS-1600/1600P system.

MS block:

MS block is the Memory Stick interface which consists of the Memory Stick Controller IC. It also performs detecting of the memory sticks and over-currents.

ETH block:

The ETH block is the Ethernet (10BASE-T/100BASE-TX) interface which consists of the Fast Ethernet Controller (MAC) and Physical Layer Device (PHY).

SIRCS block:

The SIRCS block consists of microcontroller for the decoding/encoding of the receiving SIRCS signal. It decodes the SIRCS signal that is supplied from the remote commander via the camera (PCS-C160/C160P) or the RX-47A board, and encodes/outputs the monitor control the SIRCS signal that is to be output to the IR repeater terminal.

NETIF block:

The NETIF block consists of the data aligning IC and buffers. It aligns the serial data between the optional board and the VCP block. It also performs switching of the interfaces in accordance with the optional board in use.

BRI block:

The BRI block consists of the I-Interface control IC, SRAMs and transformers for ISDN BRI lines. It performs transmission and receiving the BRI-2B line data and the call control.

PWR block:

The PWR block consists of the DC-DC step-down converters, voltage regulators and LED illuminating/flashing circuit. It generates the various voltages that are required in the PCS-1600/1600P from the DC12 V power supply voltage and controls on/off of these powers.

http://getMANUAL.com

VCP block:

The VCP block consists of the Video Communication Processor, SRAMs and DRAMs. It performs frame detection and multiplexing/demultiplexing of the communication data. It also performs compression/decompression, coding/decoding, P-in-P display creation and split display picture creation of the video data.

VIA block:

The VIA block consists of the Video Input ASIC and SDRAM for buffer. The ASIC contains the Temporal Filter and Scaller circuits, and they performs the pre-filtering process to be the compression/coding of the input video signal.Its also has functions of still picture of read/write host interface and I2C interface from the CPU.

VOA block:

The VOA block consists of the Video Output ASIC and SDRAM for buffer.
The ASIC has functions of the Scaller, ε-Filter, graphics (menu) and still picture display, and they performs overlaying of the graphics to the video data that has been decoded and expanded, and displaying process of P-in-P creation. It also has I2 C interface.

VIDAD block:

The VIDAD block consists of the Video Decoder. It performs selection of the video input signal and conversion it into the Rec.656 data format.

VIDDA block:

The VIDDA block consists of the Video Encoder, Low Pass Filter and Video Driver. It performs elimination of high frequency signals, level setting and driving in 75Ω for the video signal that is converted to D/A after D/A conversion with video encoder.

AC block:

The AC block consists of two pairs of DSP and SRAM, and the serial timing signal generator circuit that controls the serial timing between DSPs. It performs compression/decompression and coding/decoding of the audio data. It also makes the ringer tone and operating tone etc,.

EC block:

The EC block consists of two pairs of DSP and SRAM. It removes acoustic echo and reduces audio noise.

AUANA block:

The AUANA block consists of the audio AD/DA converter and audio amplifier. It performs selection of the input audio signals, generation of the applied voltage to the microphone and muting of the audio output signal.

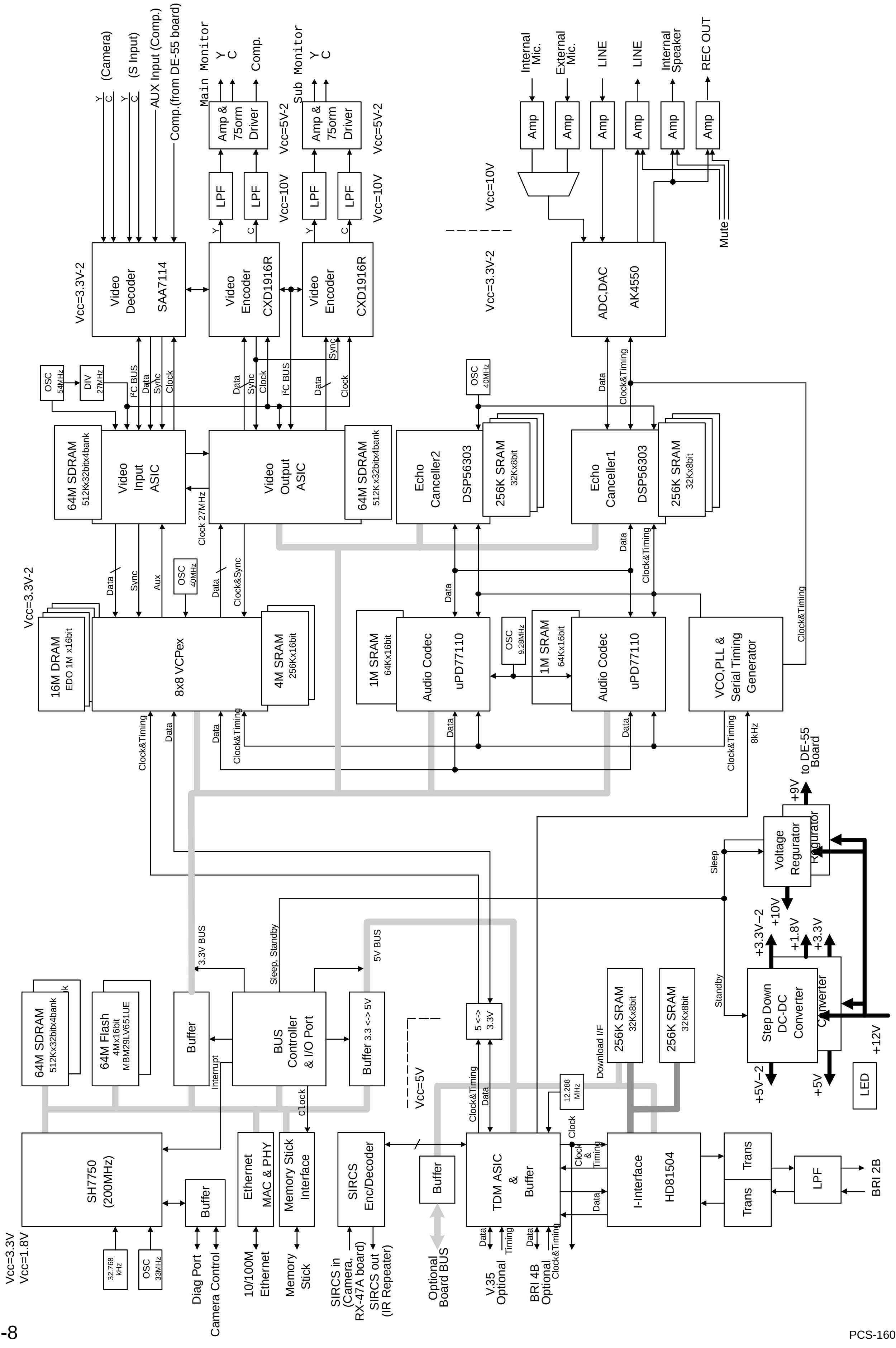

Video Decoder SAA7114
Video Encoder CXD1916R
Video Encoder CXD1916R
LPF
Amp & 75orm Driver
Main Monitor
Sub Monitor
(Camera)
(S Input)
AUX Input (Comp.)
Comp.(from DE-55 board)
Vcc=3.3V-2
Vcc=10V
Vcc=5V-2
OSC 54MHz
DIV 27MHz
I²C BUS
Data
Sync
Clock
64M SDRAM 512Kx32bitx4bank
Video Input ASIC
Video Output ASIC
Clock 27MHz
Echo Canceller2 DSP56303
Echo Canceller1 DSP56303
256K SRAM 32Kx8bit
OSC 40MHz
ADC,DAC AK4550
Internal Mic.
External Mic.
LINE
Internal Speaker
REC OUT
Amp
Mute
Clock&Timing
16M DRAM EDO 1M x16bit
8x8 VCPex
4M SRAM 256Kx16bit
Aux
Clock&Sync
1M SRAM 64Kx16bit
Audio Codec uPD77110
OSC 9.28MHz
VCO,PLL & Serial Timing Generator
8kHz
Voltage Regurator
Regurator
+9V to DE-55 Board
Sleep
Standby
+10V
+3.3V-2
+1.8V
+3.3V
Step Down DC-DC Converter
Converter
+12V
+5V-2
+5V
LED
3.3V BUS
5V BUS
Sleep, Standby
64M SDRAM 512Kx32bitx4bank
64M Flash 4Mx16bit MBM29LV651UE
Buffer
BUS Controller & I/O Port
Buffer 3.3 <-> 5V
5 <-> 3.3V
Vcc=5V
Interrupt
Clock
Download I/F
256K SRAM 32Kx8bit
12.288 MHz
SH7750 (200MHz)
Ethernet MAC & PHY
Memory Stick Interface
SIRCS Enc/Decoder
TDM ASIC & Buffer
I-Interface HD81504
Trans
LPF
BRI 2B
Vcc=3.3V
Vcc=1.8V
32.768 kHz
OSC 33MHz
Diag Port
Camera Control
10/100M Ethernet
Memory Stick
SIRCS in (Camera, RX-47A board)
SIRCS out (IR Repeater)
Optional Board BUS
V.35 Optional
BRI 4B Optional
Timing

Fig. 3-3 MA-107 Board Block Diagram

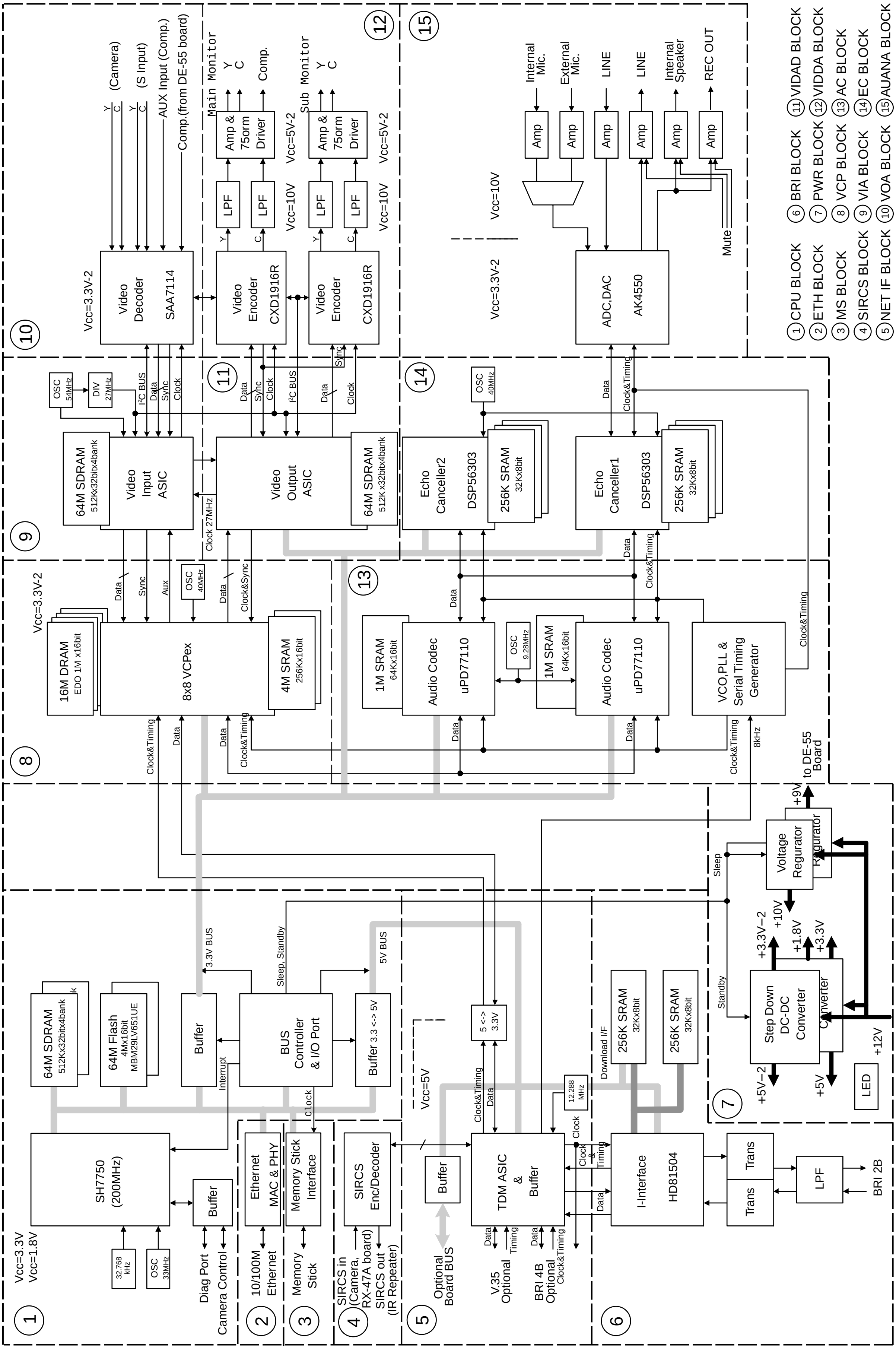

① CPU BLOCK
② ETH BLOCK
③ MS BLOCK
④ SIRCS BLOCK
⑤ NET IF BLOCK
⑥ BRI BLOCK
⑦ PWR BLOCK
⑧ VCP BLOCK
⑨ VIA BLOCK
⑩ VOA BLOCK
⑪ VIDAD BLOCK
⑫ VIDDA BLOCK
⑬ AC BLOCK
⑭ EC BLOCK
⑮ AUANA BLOCK
Vcc=3.3V-2
Video Decoder SAA7114
(Camera)
(S Input)
AUX Input (Comp.)
Comp.(from DE-55 board)
Y
C
Video Encoder CXD1916R
LPF
Amp & 75orm Driver
Main Monitor
Sub Monitor
Comp.
Vcc=10V
Vcc=5V-2
OSC 54MHz
DIV 27MHz
I²C BUS
Data
Sync
Clock
64M SDRAM 512Kx32bitx4bank
Video Input ASIC
Video Output ASIC
Clock 27MHz
Echo Canceller2 DSP56303
Echo Canceller1 DSP56303
256K SRAM 32Kx8bit
OSC 40MHz
Clock&Timing
Internal Mic.
External Mic.
LINE
Internal Speaker
REC OUT
Amp
Mute
ADC,DAC AK4550
16M DRAM EDO 1M x16bit
8x8 VCPex
4M SRAM 256Kx16bit
Aux
Clock&Sync
1M SRAM 64Kx16bit
Audio Codec uPD77110
OSC 9.28MHz
VCO,PLL & Serial Timing Generator
8kHz
to DE-55 Board
+9V
Voltage Regurator
Regurator
Sleep
Standby
+10V
+3.3V−2
+1.8V
+3.3V
Step Down DC-DC Converter
Converter
+5V−2
+5V
+12V
LED
Vcc=3.3V
Vcc=1.8V
64M SDRAM 512Kx32bitx4bank
64M Flash 4Mx16bit MBM29LV651UE
Buffer
BUS Controller & I/O Port
Buffer 3.3 <-> 5V
3.3V BUS
5V BUS
Sleep, Standby
Interrupt
SH7750 (200MHz)
32.768 kHz
OSC 33MHz
Diag Port
Camera Control
Ethernet MAC & PHY
10/100M Ethernet
Memory Stick Interface
Memory Stick
SIRCS Enc/Decoder
SIRCS in (Camera, RX-47A board)
SIRCS out (IR Repeater)
Vcc=5V
Optional Board BUS
5 <-> 3.3V
TDM ASIC & Buffer
Timing
V.35 Optional
BRI 4B Optional
12.288 MHz
Download I/F
I-Interface HD81504
Trans
BRI 2B

Fig. 3-4 MA-107 Board Block Function Diagram

[CPU block]

In the CPU block, the Hitachi SH-4 (HD6417750BP200) CPU (IC100) is used in the following modes of operation.

Clock operation mode : Mode 0
- with EXTAL input = 33 MHz, CKIO output = 50 MHz and internal clock = 200 MHz

Memory bus width of area 0 : 32 bits
- The bus width of the flash memory that connected to CPU is set to 32 bits.

Data format : Big Endian
- The order of the bytes of the data is set to big endian.

The other detailed mode setups are set by the internal register. Above-described mode is set according to the state of pin-MD0 to pin-MD8 when the CPU is resetting (these pins are used for other purposes in modes other than reset.) Because most pins are used as output pins during normal operation (used as input pins during reset), connecting the pull-up resistors or pull-down resistors is sufficient for setting. However, because pin-MD2 is used as the input pin (RxD2) during normal operation, the some of output pin (s) that connected to this IC must be controlled to the desired conditions or high impedance during reset. In the CPU block, output of the line driver (IC200) that is connected to pin-MD2/RXD is controlled to be high impedance when reset of the CPU is released.

SH-4 has the built-in timer, interrupt controller, memory controller, real-time clock and serial controller. Therefore, the SH-4 can be operated by connecting the memories only. The operating status of the CPU can be output to terminals by connecting the line driver/receiver to the serial controller input/output.

Fig.3-5 shows the connection between the CPU, memories and the PCMCIA buffers. As the memory, two (IC101, IC102) 64 Mbit (4 M × 16 bit) Flash Memories and two (IC103, IC104) 64 Mbit (512 K × 32 bit × 4 banks) synchronous DRAMs are used. The flash memories are used for storing the program and parameters. SDRAMs are used as the work area. The operating clock (33 MHz) is supplied from X100. The clock signal (32768 Hz) for the real-time clock is generated by using the crystal oscillator (X101) connected to IC100.

The reset signal for the CPU and flash memories is generated by monitoring the +3.3 V potential with the power voltage watchdog IC (IC115). The flash memory requires 20 microseconds after it is reset until it can be operated. It means that a sufficient delay time must be given to the reset signal that is input to the CPU so that the Flash Memory data can be read immediately after the CPU starts up.

Input and output ports of the serial controller are connected to the AUX Control port via the line driver/receiver (IC200). This enables the diagnostics software to be operated by activating the minimum circuitry around the CPU. The AUX Control serial port consists of the data transmission and reception lines only, and no control lines.

Fig.3-6 shows the buses signals that control the respective blocks. The block controlling buses are divided into the 5 V bus and 3.3 V bus.

5 V bus : The bus line that controls the block that operates on +5 V power supply voltage.
- The Ethernet, BRI and NETIF blocks and optional board. They can operate even in the Standby state.

3.3 V bus : The bus line that controls the block that operates on +3.3 V-2 power supply voltage.
- The VCP, VIA, VOA, VIDDA, AC and EC blocks.

They do not operate in the Standby state.

The bus control PLD (IC110) has the follwing functions:
Power supply control and reset control. Generation of the buffer control signals that are suited to the bus cycle by startup by the CPU. Generation of the access control signals of each devices. Bus wait control for the CPU. Encoding of the interrupt priority levels and interrupt control such as masking some interrupts. The optimum setup for the bus cycle of each block which the CPU has start up, is performed by the register internal of the CPU.

Circuitry whose power is turned off during the Standby state is connected to IC110 via the bus switches (IC111, IC112) that operate on +3.3 V-2 power supply voltage.

The operating power supply voltage is +3.3 V. The circuit blocks whose power is turned off during the Standby state and the interface buffers operate on +3.3 V-2 power supply voltage.

[MS block]

The MS block consists of Memory Stick Controller IC (IC230), Memory Stick power supply controller IC (IC231) and board-to-board connector (CN230), and for that is connected to the Memory Stick connector board (CN2143).

Access controls and power supply controls from the CPU to the Memory Stick are performed through by the IC230, and power on/off controls and over-current detection are performed by IC231.

Interrupt from PHY of the ETH block is sent to the CPU block by using the genereal-purpose input ports. Also, flashing control of the Standby LED is performed by using the general-purpose output ports.

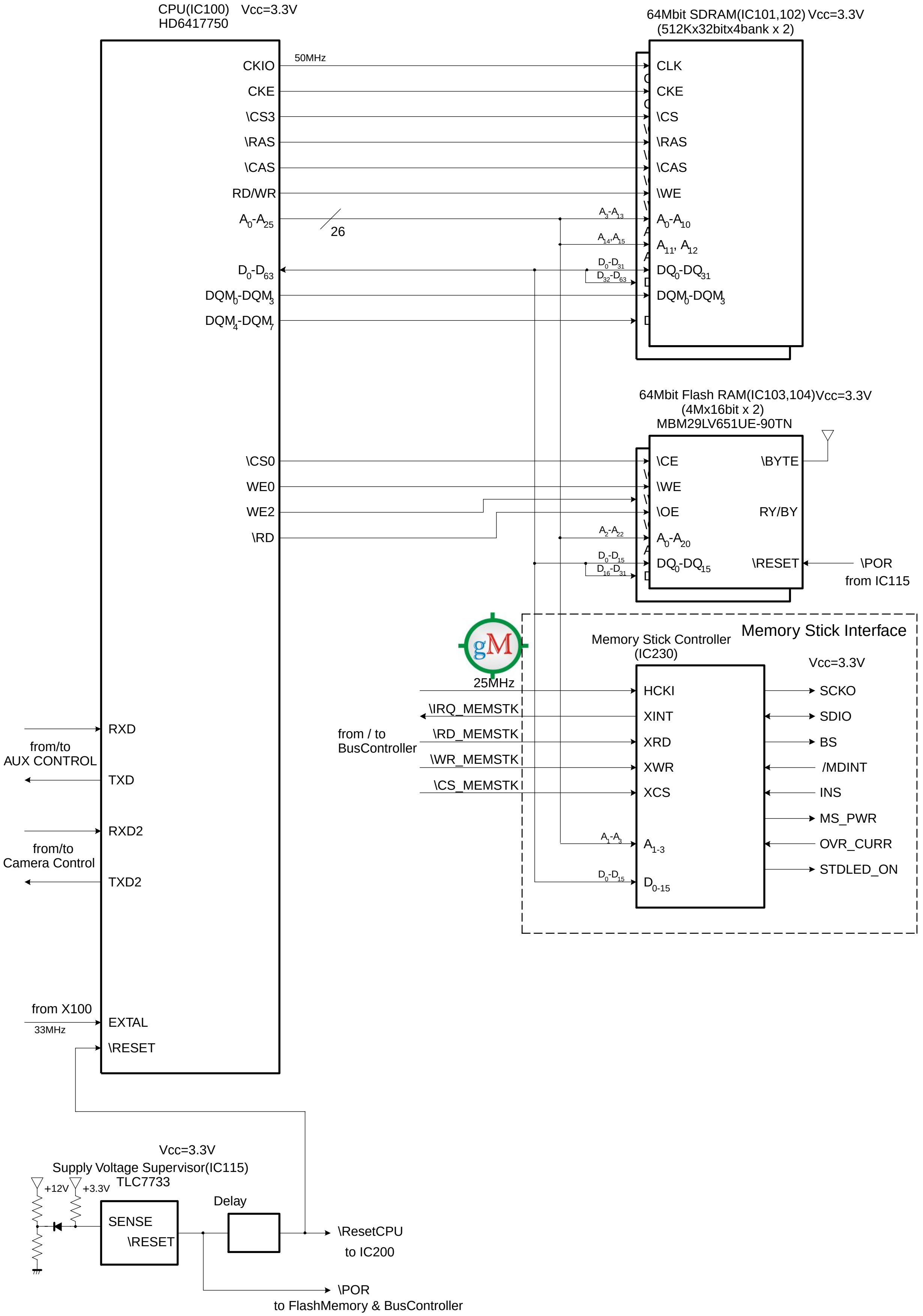

CPU(IC100) Vcc=3.3V
HD6417750
CKIO
CKE
\CS3
\RAS
\CAS
RD/WR
A_0-A_{25}
D_0-D_{63}
DQM_0-DQM_3
DQM_4-DQM_7
\CS0
WE0
WE2
\RD
RXD
TXD
RXD2
TXD2
EXTAL
\RESET
50MHz
26
64Mbit SDRAM(IC101,102) Vcc=3.3V
(512Kx32bitx4bank x 2)
CLK
CKE
\CS
\RAS
\CAS
\WE
A_3-A_{13}
A_{14},A_{15}
D_0-D_{31}
D_{32}-D_{63}
A_0-A_{10}
A_{11}, A_{12}
DQ_0-DQ_{31}
DQM_0-DQM_3
64Mbit Flash RAM(IC103,104)Vcc=3.3V
(4Mx16bit x 2)
MBM29LV651UE-90TN
\CE
\WE
\OE
A_2-A_{22}
A_0-A_{20}
D_0-D_{15}
D_{16}-D_{31}
DQ_0-DQ_{15}
\BYTE
RY/BY
\RESET
\POR
from IC115
Memory Stick Interface
Memory Stick Controller
(IC230)
Vcc=3.3V
25MHz
\IRQ_MEMSTK
\RD_MEMSTK
\WR_MEMSTK
\CS_MEMSTK
from / to
BusController
HCKI
XINT
XRD
XWR
XCS
A_1-A_3
A_{1-3}
D_0-D_{15}
D_{0-15}
SCKO
SDIO
BS
/MDINT
INS
MS_PWR
OVR_CURR
STDLED_ON
from/to
AUX CONTROL
from/to
Camera Control
from X100
33MHz
Vcc=3.3V
Supply Voltage Supervisor(IC115)
TLC7733
+12V
+3.3V
SENSE
\RESET
Delay
\ResetCPU
to IC200
\POR
to FlashMemory & BusController

Fig. 3-5 Memory and Memory Stick I/F of CPU Block

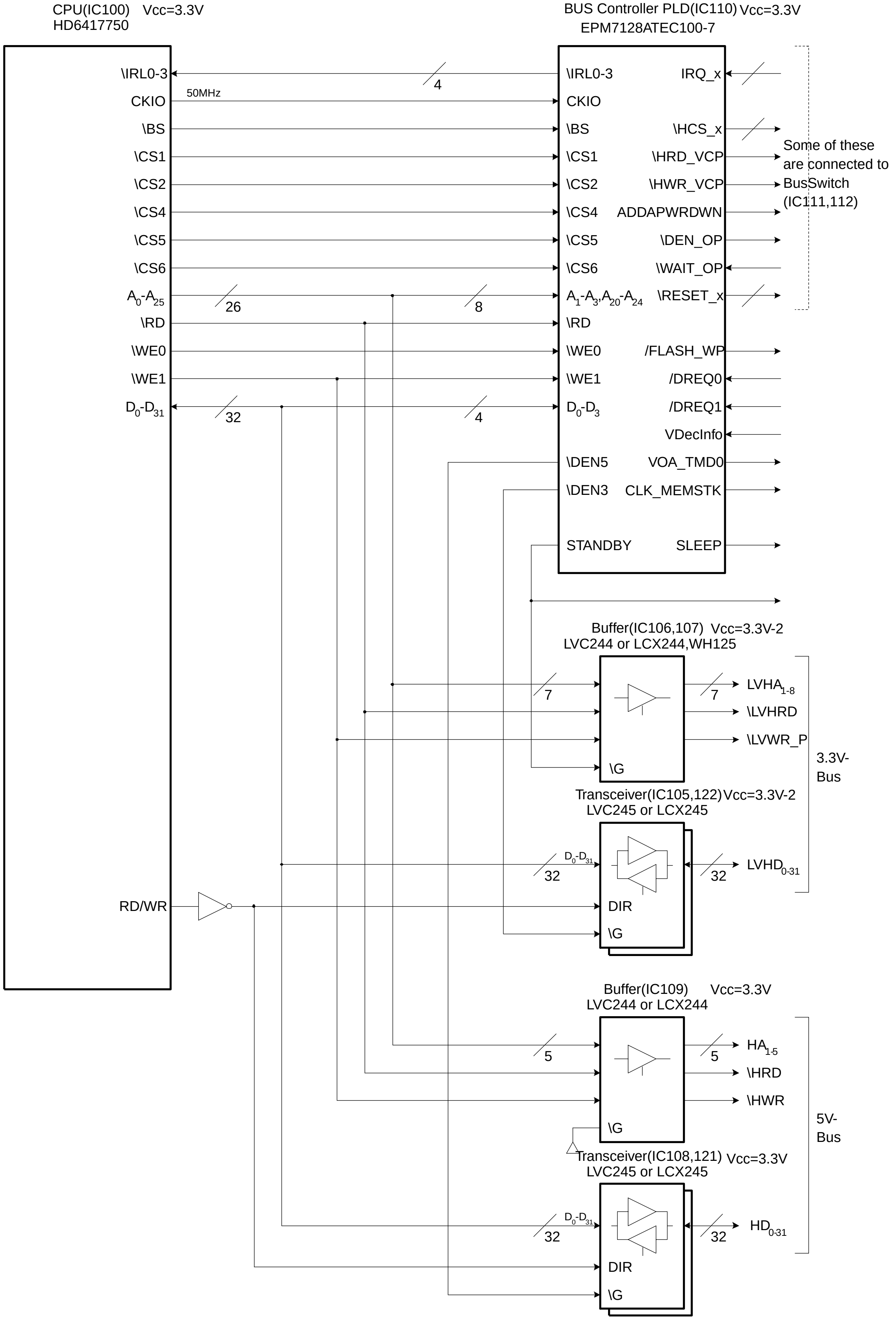

CPU(IC100) Vcc=3.3V
HD6417750
\IRL0-3
CKIO
50MHz
\BS
\CS1
\CS2
\CS4
\CS5
\CS6
A0-A25
\RD
\WE0
\WE1
D0-D31
RD/WR
4
26
8
32
4
BUS Controller PLD(IC110) Vcc=3.3V
EPM7128ATEC100-7
\IRL0-3
CKIO
\BS
\CS1
\CS2
\CS4
\CS5
\CS6
A1-A3,A20-A24
\RD
\WE0
\WE1
D0-D3
\DEN5
\DEN3
STANDBY
IRQ_x
\HCS_x
\HRD_VCP
\HWR_VCP
ADDAPWRDWN
\DEN_OP
\WAIT_OP
\RESET_x
/FLASH_WP
/DREQ0
/DREQ1
VDecInfo
VOA_TMD0
CLK_MEMSTK
SLEEP
Some of these are connected to BusSwitch (IC111,112)
Buffer(IC106,107) Vcc=3.3V-2
LVC244 or LCX244,WH125
7
7
LVHA1-8
\LVHRD
\LVWR_P
\G
3.3V-Bus
Transceiver(IC105,122) Vcc=3.3V-2
LVC245 or LCX245
D0-D31
32
32
LVHD0-31
DIR
\G
Buffer(IC109) Vcc=3.3V
LVC244 or LCX244
5
5
HA1-5
\HRD
\HWR
\G
5V-Bus
Transceiver(IC108,121) Vcc=3.3V
LVC245 or LCX245
D0-D31
32
32
HD0-31
DIR
\G

Fig. 3-6 System Bus I/F of CPU Block

[ETH block]

ETH block is the 10BASE-T/100BASE-TX interface, that consists of Fast Ethernet Controller IC (IC250), Fast Ethernet PHY IC (IC251) and modular jack built-in pulse transfoemer (CN251). (Refer to Fig.3-7)

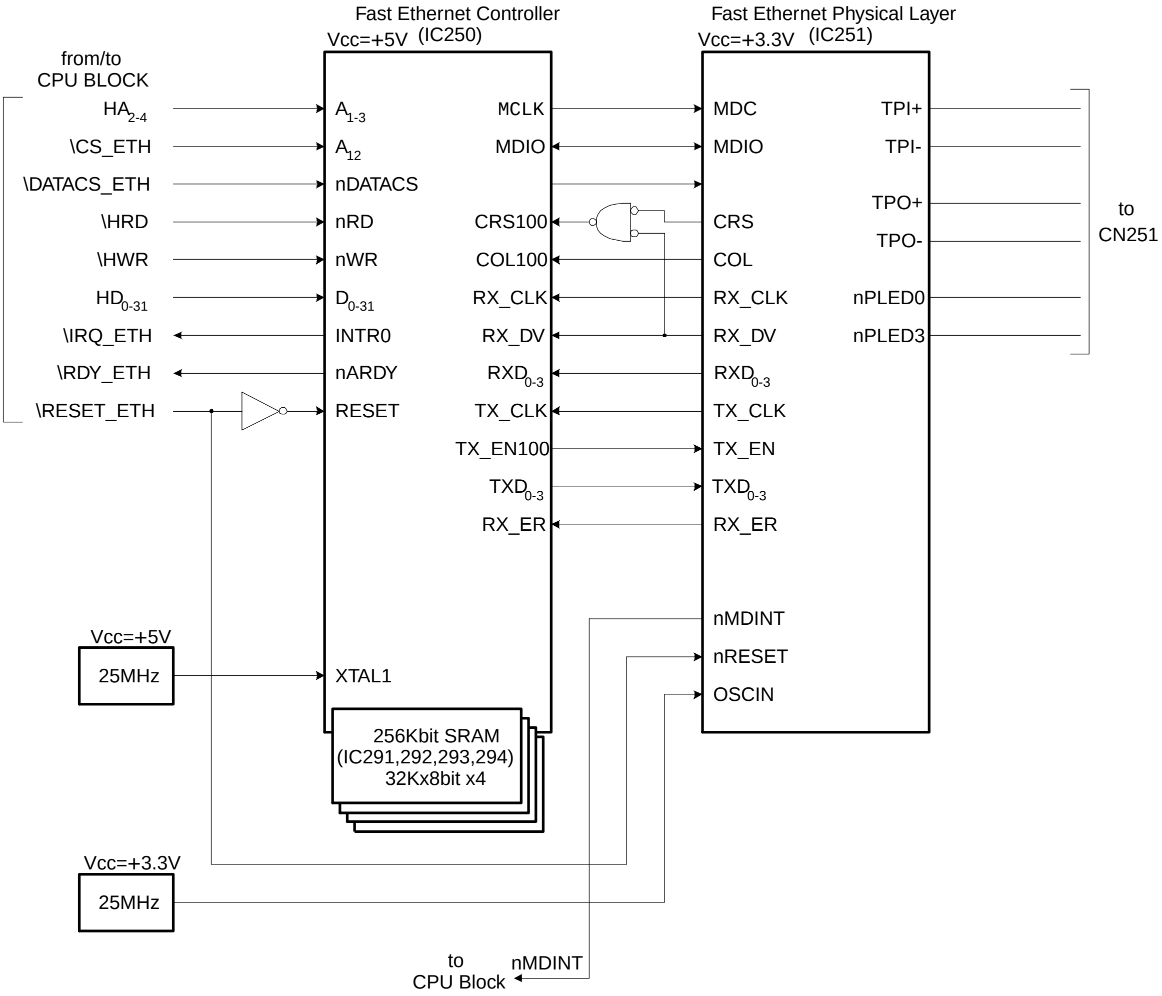

Fast Ethernet Controller
Vcc=+5V (IC250)
Fast Ethernet Physical Layer
Vcc=+3.3V (IC251)
from/to
CPU BLOCK
HA2-4
\CS_ETH
\DATACS_ETH
\HRD
\HWR
HD0-31
\IRQ_ETH
\RDY_ETH
\RESET_ETH
A1-3
A12
nDATACS
nRD
nWR
D0-31
INTR0
nARDY
RESET
XTAL1
MCLK
MDIO
CRS100
COL100
RX_CLK
RX_DV
RXD0-3
TX_CLK
TX_EN100
TXD0-3
RX_ER
MDC
MDIO
CRS
COL
RX_CLK
RX_DV
RXD0-3
TX_CLK
TX_EN
TXD0-3
RX_ER
nMDINT
nRESET
OSCIN
TPI+
TPI-
TPO+
TPO-
nPLED0
nPLED3
to
CN251
Vcc=+5V
25MHz
256Kbit SRAM
(IC291,292,293,294)
32Kx8bit x4
Vcc=+3.3V
25MHz
to
CPU Block
nMDINT

Fig. 3-7 Ethernet Block

[SIRCS block]

The SIRCS block consists of the selector circuit (IC781, IC782) that selects the received SIRCS signal from either the camera (PCS-C160/C160P) or the RX-47A board, and the microcontroller that decodes the selected the received SIRCS signal and encodes (with modulating by the carrier wave) the SIRCS signal to be transmitted from IR-OUT (refer to Fig. 3-8). Because the microcontroller (IC780) has only a general-purpose port, it cannot be connected directly to the CPU bus. The microcontroller (IC780) is connected to the CPU bus indirectly by connecting it to the I/O port of TDM-ASIC (IC750 of NETIF block). The interrupt signal is latched internal of IC110 (CPU block) so that the level triggered interrupt are realized.
The operating clock (4 MHz) of the microcontroller (IC780) is generated by the crystal oscillator (X780).
The SIRCS block is reset by the “RES_ALL” signal that is supplied from the CPU block.
It operates on +5 V power supply voltage.

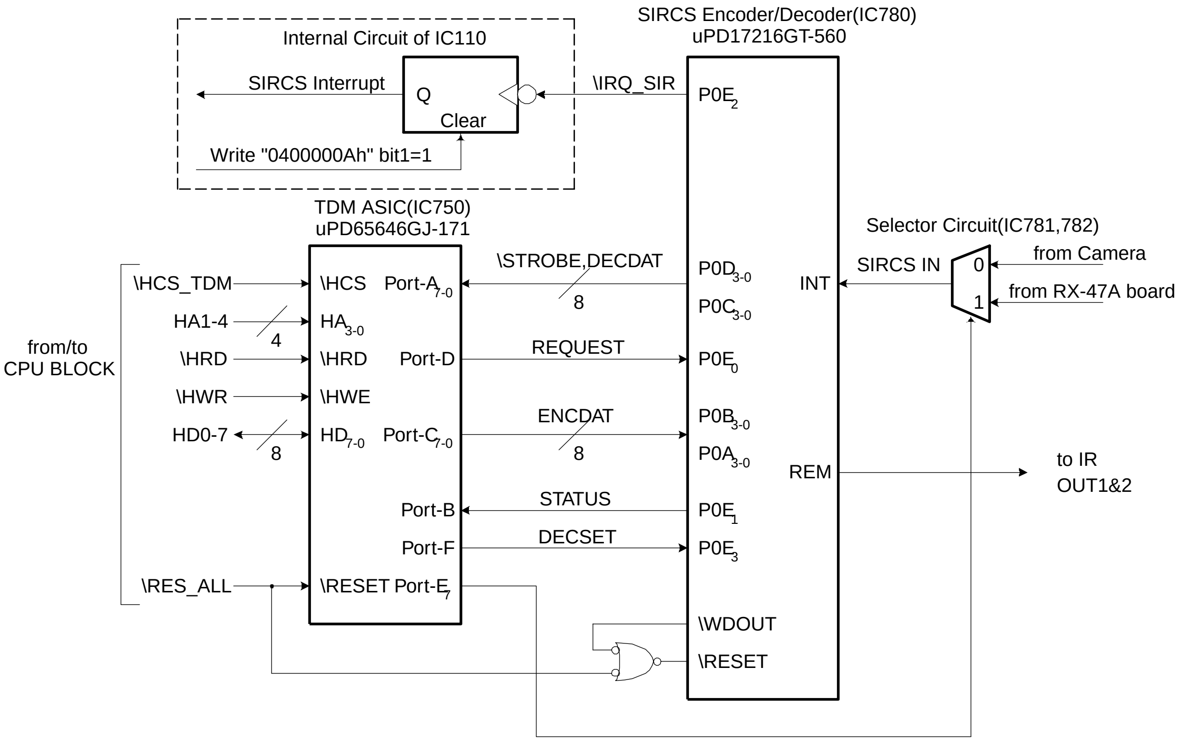

SIRCS Encoder/Decoder(IC780)
uPD17216GT-560
Internal Circuit of IC110
SIRCS Interrupt
Q
Clear
\IRQ_SIR
P0E2
Write "0400000Ah" bit1=1
TDM ASIC(IC750)
uPD65646GJ-171
Selector Circuit(IC781,782)
from Camera
from RX-47A board
0
1
SIRCS IN
INT
\STROBE,DECDAT
8
P0D3-0
P0C3-0
\HCS_TDM
\HCS
Port-A7-0
HA1-4
4
HA3-0
from/to
CPU BLOCK
\HRD
\HRD
Port-D
REQUEST
P0E0
\HWR
\HWE
HD0-7
8
HD7-0
Port-C7-0
ENCDAT
8
P0B3-0
P0A3-0
REM
to IR
OUT1&2
Port-B
STATUS
P0E1
Port-F
DECSET
P0E3
\RES_ALL
\RESET
Port-E7
\WDOUT
\RESET

Fig. 3-8 SIRCS Block & Connecting with Bus

[NETIF block]

Fig. 3-9 shows connection of the NETIF block. The NETIF block converts the array of the line data that is sent and received between both the BRI block and the optional board and the VCP block, into the format that suits the respective blocks. It also performs switching of the optional boards interfaces in accordance with the optional board in use.
Converting the data array means to convert the multiple pairs (a pair of send/receive data for each BIR-1 B) of the serial data that is input and output to and from the VCP block. When the V.35 interface is used, the serial data whose clock changes continuously in accordance with the communication speed of the communication line in use, is converted to the serial data that has the stable clock frequency (3.072 MHz) of the VCP block circuit and is not cotinuous in every 8 kHz frame.The reverse conversion is also included. These conversion operations are performed internal of the TDM_ASIC (IC750). In addition to the above-described operations, the TDM_ASIC (IC750) performs the following operations : generation of the 8 kHz clock that is synchronized with the line and is supplied to the AC block; generation of the 12.288 MHz clock that is used as the operating clock both of the BRI block and the IF-823 board : and detection of the line speed (including generation of interrupt when the line speed changes) for the V.35 interface.

The TDM_ASIC (IC750) is partly used for the input/output port that controls and detects the respective blocks of the SIRCS, BRI, AUANA and PWR.

The operating clock signal (12.288 MHz) of the TDM_ASIC (IC750) is generated by the crystal oscillator (X750).

The NETIF block is reset by the “RES_ALL” signal that is supplied from the CPU block.

It operates on +5 V power supply voltage.

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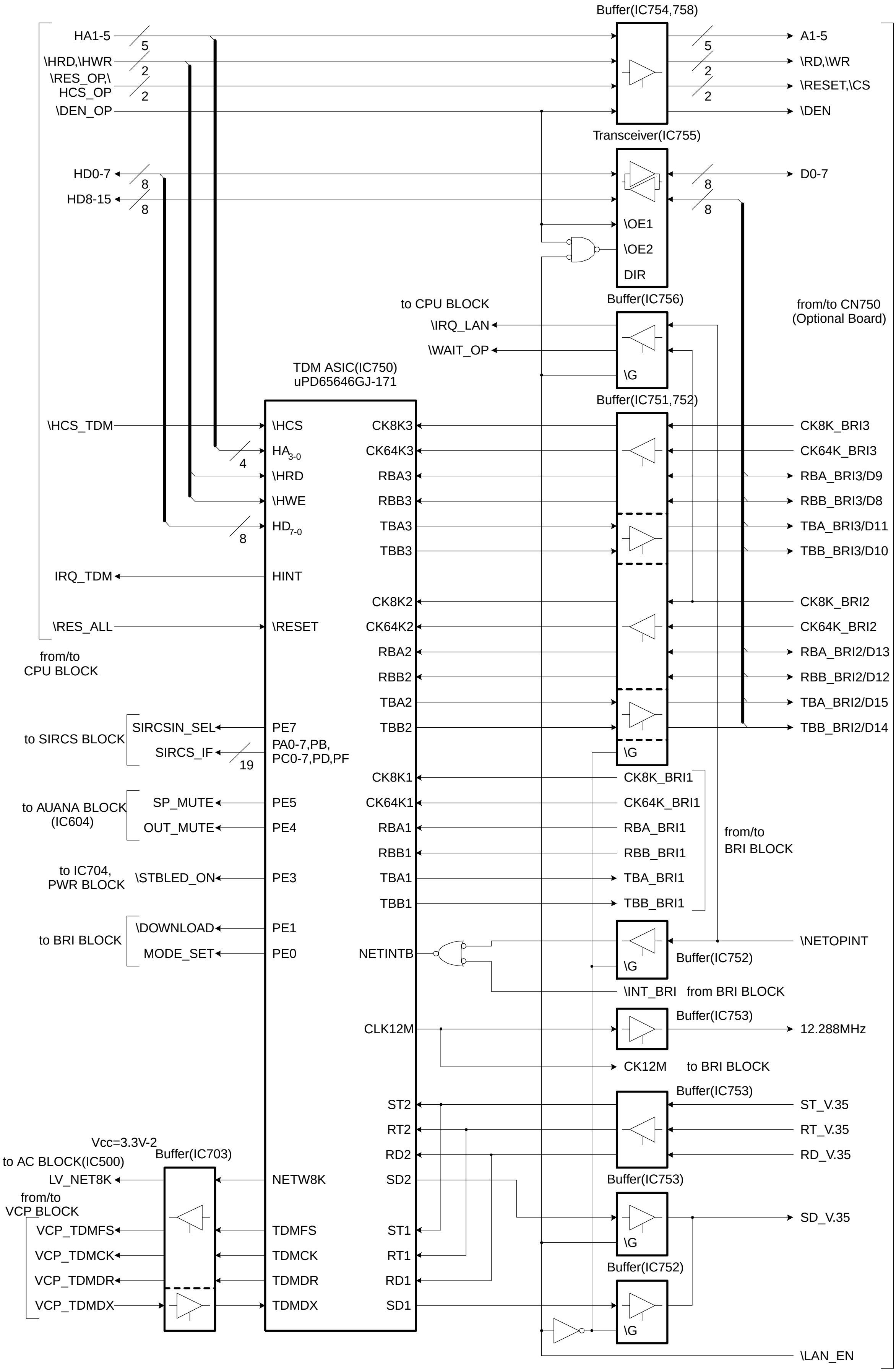
Buffer(IC754,758)
HA1-5
5
\HRD,\HWR
2
\RES_OP,\
HCS_OP
2
\DEN_OP
A1-5
\RD,\WR
\RESET,\CS
\DEN
Transceiver(IC755)
HD0-7
8
HD8-15
8
D0-7
\OE1
\OE2
DIR
to CPU BLOCK
\IRQ_LAN
\WAIT_OP
Buffer(IC756)
\G
from/to CN750
(Optional Board)
TDM ASIC(IC750)
uPD65646GJ-171
Buffer(IC751,752)
\HCS_TDM
\HCS
HA3-0
4
\HRD
\HWE
HD7-0
CK8K3
CK64K3
RBA3
RBB3
TBA3
TBB3
CK8K_BRI3
CK64K_BRI3
RBA_BRI3/D9
RBB_BRI3/D8
TBA_BRI3/D11
TBB_BRI3/D10
IRQ_TDM
HINT
CK8K2
\RES_ALL
\RESET
CK64K2
RBA2
RBB2
TBA2
TBB2
CK8K_BRI2
CK64K_BRI2
RBA_BRI2/D13
RBB_BRI2/D12
TBA_BRI2/D15
TBB_BRI2/D14
from/to
CPU BLOCK
to SIRCS BLOCK
SIRCSIN_SEL
SIRCS_IF
19
PE7
PA0-7,PB,
PC0-7,PD,PF
CK8K1
CK64K1
RBA1
RBB1
TBA1
TBB1
CK8K_BRI1
CK64K_BRI1
RBA_BRI1
RBB_BRI1
TBA_BRI1
TBB_BRI1
from/to
BRI BLOCK
to AUANA BLOCK
(IC604)
SP_MUTE
OUT_MUTE
PE5
PE4
to IC704,
PWR BLOCK
\STBLED_ON
PE3
to BRI BLOCK
\DOWNLOAD
MODE_SET
PE1
PE0
NETINTB
\NETOPINT
Buffer(IC752)
\INT_BRI
from BRI BLOCK
Buffer(IC753)
CLK12M
12.288MHz
CK12M
to BRI BLOCK
Buffer(IC753)
ST2
RT2
RD2
SD2
ST_V.35
RT_V.35
RD_V.35
Vcc=3.3V-2
Buffer(IC703)
to AC BLOCK(IC500)
LV_NET8K
NETW8K
Buffer(IC753)
SD_V.35
from/to
VCP BLOCK
VCP_TDMFS
VCP_TDMCK
VCP_TDMDR
VCP_TDMDX
TDMFS
TDMCK
TDMDR
TDMDX
ST1
RT1
RD1
SD1
Buffer(IC752)
\LAN_EN

Fig. 3-9 NETIF Block

[BRI block]

The BRI block performs the BRI-2B line control and data transmitting/receiving. The BRI block consists of the following devices. The I-Interface control IC (IC800) as the central component of this block, the 256 kbit SRAM (IC801) where the Firmware for the I-Interface control IC (IC800) is stored, the 256 kbit SRAM (IC802) that is a work area RAM, the bus signal selector buffers (IC810, IC811) and SRAM address setting latches (IC808, IC809) that are used to download the Firmware to SRAM from the CPU, the latch circuit (IC806, IC805, IC803) to generate interrupts and to output the status to the CPU from the I-Interface control IC (IC800), and the circuit (IC803, IC804, IC807, IC812) to generate the signals that control the above-described circuit in response to the access from the CPU. (Refer to Fig. 3-10.)

Because the I-Interface control IC (IC800) starts its operation by executing the program codes that are stored in the SRAM (IC801), the Firmware must be downloaded to the SRAM (IC801) beforehand from the CPU. Downloading is performed by the following setup.

(1) Setting the SRAM interface output of the I-Interface control IC (IC800) to High-Z by putting the “RES_BRI” and “MODE_SET” signals active.
(2) Connecting the CPU system bus with the SRAM (IC801) via the bus signal selector buffer (IC810, IC811) and the SRAM address setting latches (IC808, IC809) by putting the “DOWNLOAD” signal active.
(3) Repeating writing the SRAM address into the latches (IC808, IC809) and writing the program code into the SRAM.

The interrupt signal to the CPU from the I-Interface control IC (IC800) is created when the I-Interface control IC (IC800) writes into the latch circuit (IC806, IC805, IC803) using the SRAM interface. This interrupt signal is once input into IC750 of the NETIF block and is multiplexed with the other interrupts, then is output as “IRQ_TDM”. The interrupt signal is cleared when the “SDETCLR” signal goes active when the CPU reads the specific address. The interrupt signal status and the result of the SRAM check by the I-Interface control IC (IC800) can be read out from the CPU via the buffer (IC758). The information of the camera (PCS-C160/160P) is connected to the processor directly or not can be obtained by reading this buffer (IC758).

The interface with the telephone line contains a choke coil (FL800) as a countermeasure against EMI and pulse transformers (T201, T202) between the modular jack (CN800) and the I-Interface control IC (IC800). The line data is converted to two paires (A pair for transmission and reception respectively) of data that is synchronized with 64 kHz, and is transferred/received between the I-Interface control IC (IC800) and the NETIF block (IC750).

The operating clock signal (12.288 MHz) of the I-Interface control IC (IC800) is supplied from TDM_ASIC (IC750) of the NETIF block.
The BRI block is reset by the “RES_BRI” signal that is supplied from the CPU block.

It operates on +5 V power supply voltage.

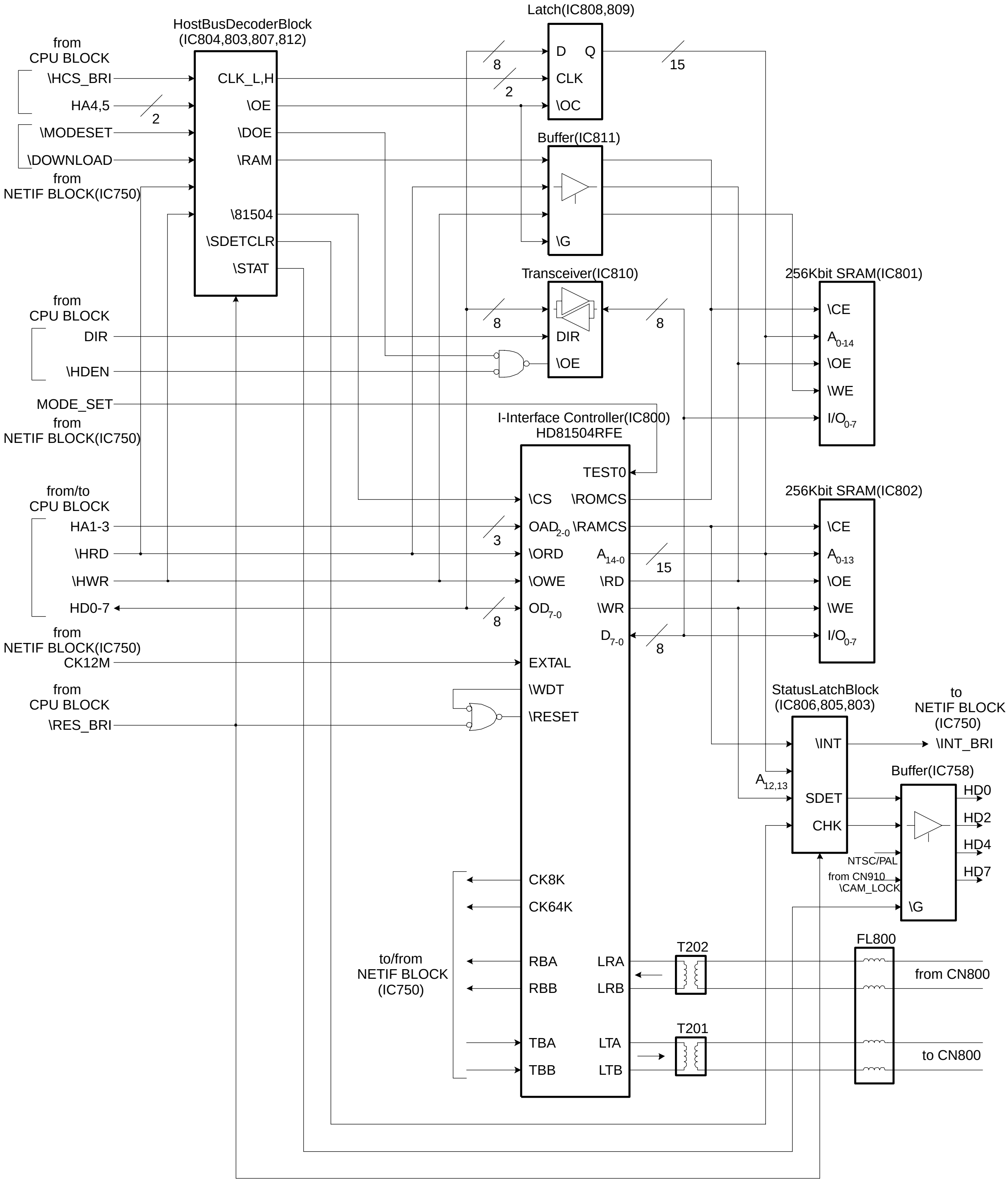
HostBusDecoderBlock
(IC804,803,807,812)
from
CPU BLOCK
\HCS_BRI
HA4,5
2
\MODESET
\DOWNLOAD
from
NETIF BLOCK(IC750)
CLK_L,H
\OE
\DOE
\RAM
\81504
\SDETCLR
\STAT
Latch(IC808,809)
8
2
D
Q
CLK
\OC
15
Buffer(IC811)
\G
Transceiver(IC810)
8
8
DIR
\OE
256Kbit SRAM(IC801)
\CE
A_{0-14}
\OE
\WE
I/O_{0-7}
from
CPU BLOCK
DIR
\HDEN
MODE_SET
from
NETIF BLOCK(IC750)
I-Interface Controller(IC800)
HD81504RFE
TEST0
\CS
\ROMCS
from/to
CPU BLOCK
HA1-3
\HRD
\HWR
HD0-7
3
OAD_{2-0}
\RAMCS
\ORD
A_{14-0}
15
\OWE
\RD
8
OD_{7-0}
\WR
D_{7-0}
8
256Kbit SRAM(IC802)
\CE
A_{0-13}
\OE
\WE
I/O_{0-7}
from
NETIF BLOCK(IC750)
CK12M
EXTAL
from
CPU BLOCK
\RES_BRI
\WDT
\RESET
StatusLatchBlock
(IC806,805,803)
\INT
$A_{12,13}$
SDET
CHK
to
NETIF BLOCK
(IC750)
\INT_BRI
Buffer(IC758)
HD0
HD2
HD4
HD7
NTSC/PAL
from CN910
\CAM_LOCK
\G
CK8K
CK64K
to/from
NETIF BLOCK
(IC750)
RBA
RBB
LRA
LRB
TBA
TBB
LTA
LTB
T202
T201
FL800
from CN800
to CN800

Fig. 3-11 PWR Block

[PWR block]

The following power supply voltages are generated from +12 V DC that is supplied from the AC adaptor.

+3.3 V : +3.3 V DC supply voltage supplies constantly
To the CPU, Memory Stick and Ethernet (PHY) blocks
+5 V : +5 V DC supply voltage supplies constantly
To the BRI, NETIF, SIRCS and Ethernet (MAC) blocks
To the RX-47A board and Optional board
+1.8 V : +1.8 V DC supply voltage supplies constantly
DC supply voltage for the exclusive use of the SH-4 (HD6417750BP200).
+1.95 V is accuracy supplied voltage.
+3.3 V-2 : +3.3 V DC supply voltage that is turned off during standby state.
To the VCP, VIA, VOA, AC and EC blocks, AD/DA converter section of the AUANA block
+5 V-2 : +5 V DC supply voltage that is turned off during standby state.
To the VIDIN block, 75 Ω driver section of VIDOUT block, the DE-55 board
+10 V : +10 V DC supply voltage that is turned off during sleep and standby states.
To all sections of the AUANA block except the AD/DA converter section, Low pass filter section of VIDOUT block
+9 V : +9 V DC supply voltage that is turned off during sleep and standby states.
To the DE-55 board

Fig.3-11 shows the PWR block configurations.
+3.3 V DC supply voltage is generated by IC900 (step-down converter), +5 V DC supply voltage is generated by IC901 (step-down converter) and +3.3 V-2 and +5 V-2 DC supply voltages are generated by IC902 (step-down converter), and these circuits consists of thier peripheral FETs, inductors and capacitors, which forms switching and smooting circuits. +10 V DC supply voltage is generated by IC904 (regulator) and +9 V DC supply voltage is generated by IC908 (regulator).
+3.3 V-2 and +5 V-2 DC supply voltages are turned on and off by controlling IC902 (step-down converter) using the “STANDBY” signal that is supplied from the CPU block. +10 V and +9 V DC supply voltages are turned on and off by controlling IC904 and IC908 (regulators) using the “SLEEP” signal that is supplied from the CPU block.
Power supply voltage of the camera (PCS-C160/C160P) is supplied +12 V DC from the AC adaptor directly via fuse for exclusive use of the camera.

“POWER” and “STANDBY” indicator LEDs are controlled to turn on and off as shown below in accordance with the “STANDBY” and “SLEEP” signals that are supplied from the CPU block.

SLEEP signal	STANDBY signal	→	“POWER” LED	“STANDBY” LED
LOW	LOW	→	ON	OFF
Don't care	HIGH	→	OFF	ON
HIGH	LOW	→	BLINK	OFF

Flashing of the LED is performed by the oscillator circuit consisting of IC905. “STANDBY” indicator LED can be controlled to flash by setting of the CPU in addition to the illuminating conditions as described above. (It is valid only when “STANDBY” LED is in OFF.)

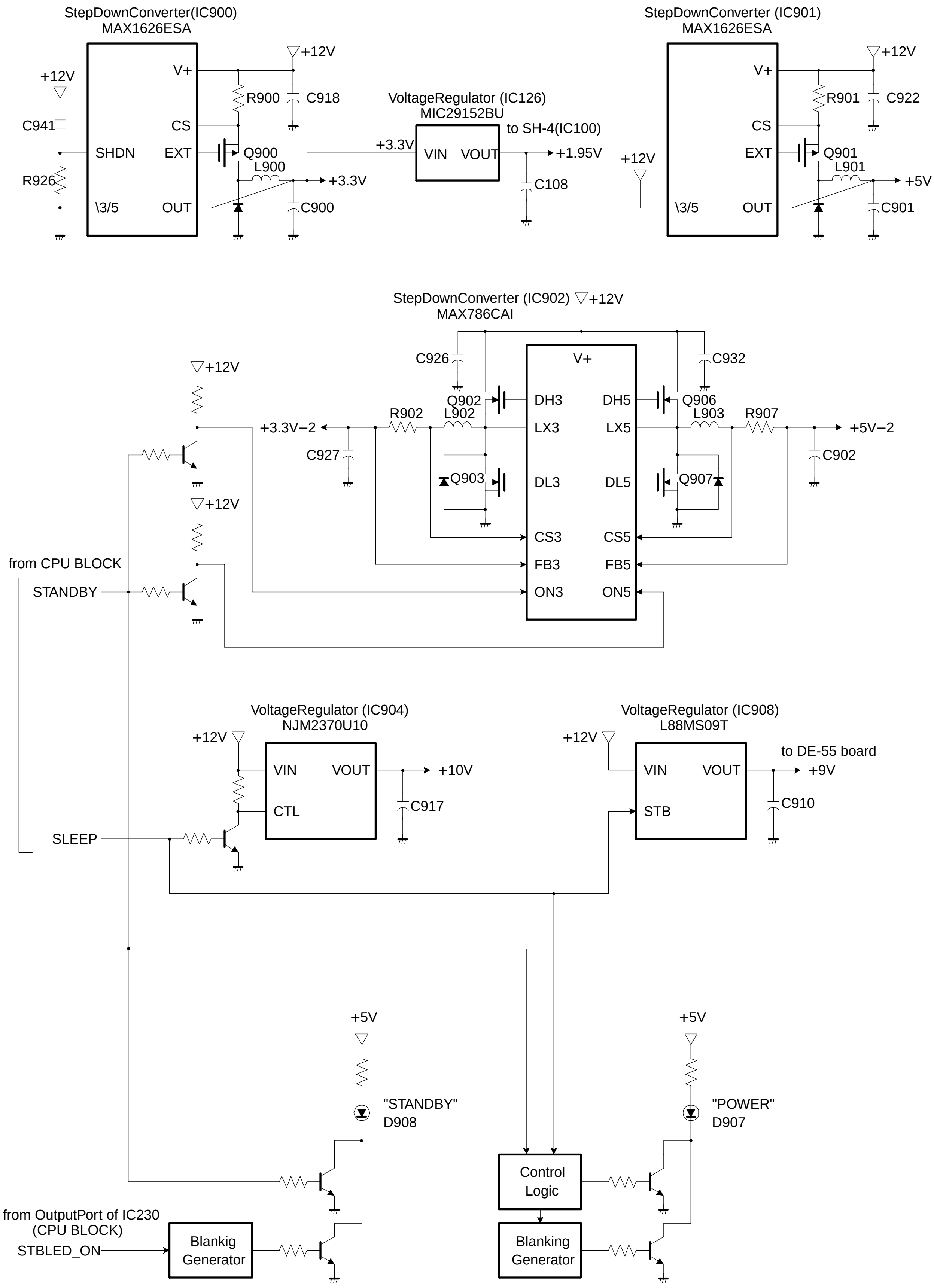
StepDownConverter(IC900)
MAX1626ESA
+12V
C941
R926
SHDN
\3/5
V+
CS
EXT
OUT
+12V
R900
C918
Q900
L900
+3.3V
C900
VoltageRegulator (IC126)
MIC29152BU
+3.3V
VIN
VOUT
to SH-4(IC100)
+1.95V
C108
StepDownConverter (IC901)
MAX1626ESA
+12V
V+
CS
EXT
\3/5
OUT
+12V
R901
C922
Q901
L901
+5V
C901
StepDownConverter (IC902)
MAX786CAI
+12V
C926
C932
V+
DH3
DH5
LX3
LX5
DL3
DL5
CS3
CS5
FB3
FB5
ON3
ON5
Q902
L902
R902
Q906
L903
R907
Q903
Q907
+3.3V−2
C927
+5V−2
C902
+12V
+12V
from CPU BLOCK
STANDBY
SLEEP
VoltageRegulator (IC904)
NJM2370U10
+12V
VIN
VOUT
CTL
+10V
C917
VoltageRegulator (IC908)
L88MS09T
+12V
VIN
VOUT
STB
to DE-55 board
+9V
C910
+5V
"STANDBY"
D908
+5V
"POWER"
D907
Control
Logic
Blanking
Generator
from OutputPort of IC230
(CPU BLOCK)
STBLED_ON
Blankig
Generator

Fig. 3-11 PWR Block

[VCP block]

The VCP block consists of the VCPex (IC300), two 4 M-bit SRAMs (IC301, IC302) that are used for storing program code and as the work area RAM, and four 16 M-bit DRAMs (IC303 to IC306) that are used as the picture data buffer.
The VCP block has the following functions : separating the video data, audio data and other data from the received line data; multiplexing the transmitting video and audio data into the transmission data that is sent to the line; compression and decompression of the video signal ; generation of the P-in-P display ; and generation of the split display when multiple points are connected. The program code that is required to operate the VCPex (IC300) is downloaded from the CPU and saved in the SRAMs (IC301, IC302). Downloading is performed by the both softwares of the CPU and that of VCPex.

Fig.3-12 shows each connection with the VCPex (IC300) that to the system bus, to the AC block,to NETIF block, to SRAM (IC301, IC302) and to DRAM (IC303 to IC306). The operating clock (40 MHz) is supplied from the crystal oscillator (X300). Among connection with the system bus, READ/WRITE pulse uses the "HRD_VCP" and "HWR_VCP" signals that are exclusive to VCPex (IC300). The interrupt signal "IRQ_VCP" is also outputted here.

The line data is transmitted to and received from the TDM_ASIC (IC750) of the NETIF block in the form of a serial signal. The clock and frame sync signals are supplied from the TDM_ASIC (IC750). Audio data is transmitted to and received from the Audio Code ICs (IC520, IC530) of the AC block in the form of a serial signal. The clock and frame sync signals are supplied from the Serial Timing Generator (IC501). However, trigger signal that generates the frame sync signal is used from the "AUX6, AUX7" output of VCPex (IC300).

Video input data is supplied from the VIA block and video output data is sent to the VDA block. Fig.3-13 shows the video input/output signal interface of VCPex (IC300). The basic clock signal of video data input/output is 27 MHz clock that is supplied from the video system general clock driver IC (IC390) of the VIA block. Video input data is pixel data consisting of 8 bit luminance sigal and 8 bit chrominance signal that are supplied from the Video Input ASIC (IC350). 13.5 MHz pixel clock is also outputted from the VIA (IC350).

Video output data is pixel data consisting of 8 bit luminance signal and 8 bit chrominance signal, and blanking signal that are outputted to the Video Output ASIC (IC370).

13.5 MHz pixel clock, H sync signal, V sync signal and Field ID signal are also outputted from the Video Output ASIC (IC370).

Among of general-purpose ports "AUX0 to AUX7" of VCPex (IC300), "AUX3" is used to Low Pass Filter of the Video Input ASIC (IC350) and Enable/Disable of the Scaller, "AUX0 and AUX1" are used to ε-Filter of the Video Output ASIC (IC370) and Enable/Diable of Scaller, and "AUX4" is used as the input port of Field ID signal to the video output signal. As described in above, "AUX6 and AUX7" are used as the trigger output that generates the frame sync signal in a serial signal for AC block.

The VCP block is reset by the "RES_VCP" signal that is supplied from the CPU block.

It operates on +3.3 V-2 power supply voltage.

[VIA block]

The VIA block consists of the Video Input ASIC and SDRAM for buffer, and it has following functions.

- Temporal Filter and Scaller performs pre-filtering process for compression/coding of the video input signal.
- Sync separation function can separates the video decoder input signal from the internal sync signals. Therefore, all video signals except video decoder signal operates by video system general clock (27 MHz).
- It is host interface for read-out/write-in from the CPU that performs read/write and display functions for still picture.
- Two system output signals to the VIA block and VCP block. It can output by selecting the input signal either still picture or Video Decoder.
- I2C interface. In I2C interface of the VIA block, it performs setting of the Video Decoder.

[VOA block]

The VOA block consists of the Video Output ASIC and SDRAM for buffer, and it has following functions.

- Two system input from the VIA block and VCP block.
- Two system output of the Main Monitor and Sub Monitor.
- ε-Filter and Scaller performs filtering process of the display picture after it has been expanded.
- Composition of the P-in-P display.
- It is host interface for read-out/write-in from the CPU that performs read/write and display functions for still picture.
- I2C interface. In I2C interface of the VIA block, it performs setting of the Video Decoder.

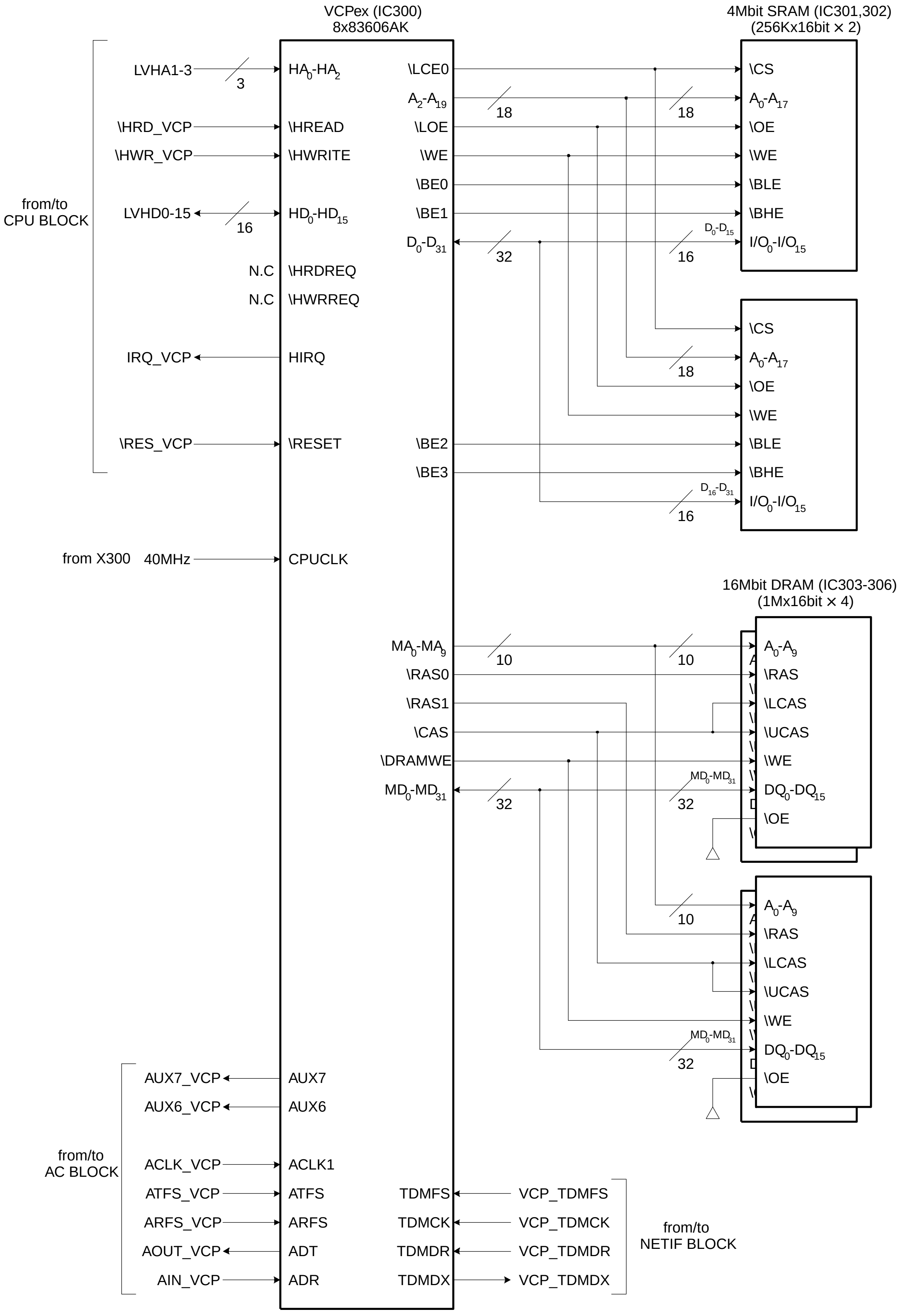
VCPex (IC300)
8x83606AK
4Mbit SRAM (IC301,302)
(256Kx16bit × 2)
from/to
CPU BLOCK
LVHA1-3
3
\HRD_VCP
\HWR_VCP
LVHD0-15
16
N.C
N.C
IRQ_VCP
\RES_VCP
HA0-HA2
\HREAD
\HWRITE
HD0-HD15
\HRDREQ
\HWRREQ
HIRQ
\RESET
\LCE0
A2-A19
\LOE
\WE
\BE0
\BE1
D0-D31
\BE2
\BE3
18
18
32
16
D0-D15
D16-D31
\CS
A0-A17
\OE
\WE
\BLE
\BHE
I/O0-I/O15
from X300
40MHz
CPUCLK
16Mbit DRAM (IC303-306)
(1Mx16bit × 4)
MA0-MA9
\RAS0
\RAS1
\CAS
\DRAMWE
MD0-MD31
10
10
32
32
MD0-MD31
A0-A9
\RAS
\LCAS
\UCAS
\WE
DQ0-DQ15
\OE
from/to
AC BLOCK
AUX7_VCP
AUX6_VCP
ACLK_VCP
ATFS_VCP
ARFS_VCP
AOUT_VCP
AIN_VCP
AUX7
AUX6
ACLK1
ATFS
ARFS
ADT
ADR
TDMFS
TDMCK
TDMDR
TDMDX
VCP_TDMFS
VCP_TDMCK
VCP_TDMDR
VCP_TDMDX
from/to
NETIF BLOCK

Fig. 3-12 Host I/F, TDM I/F and Audio I/F of VCPex

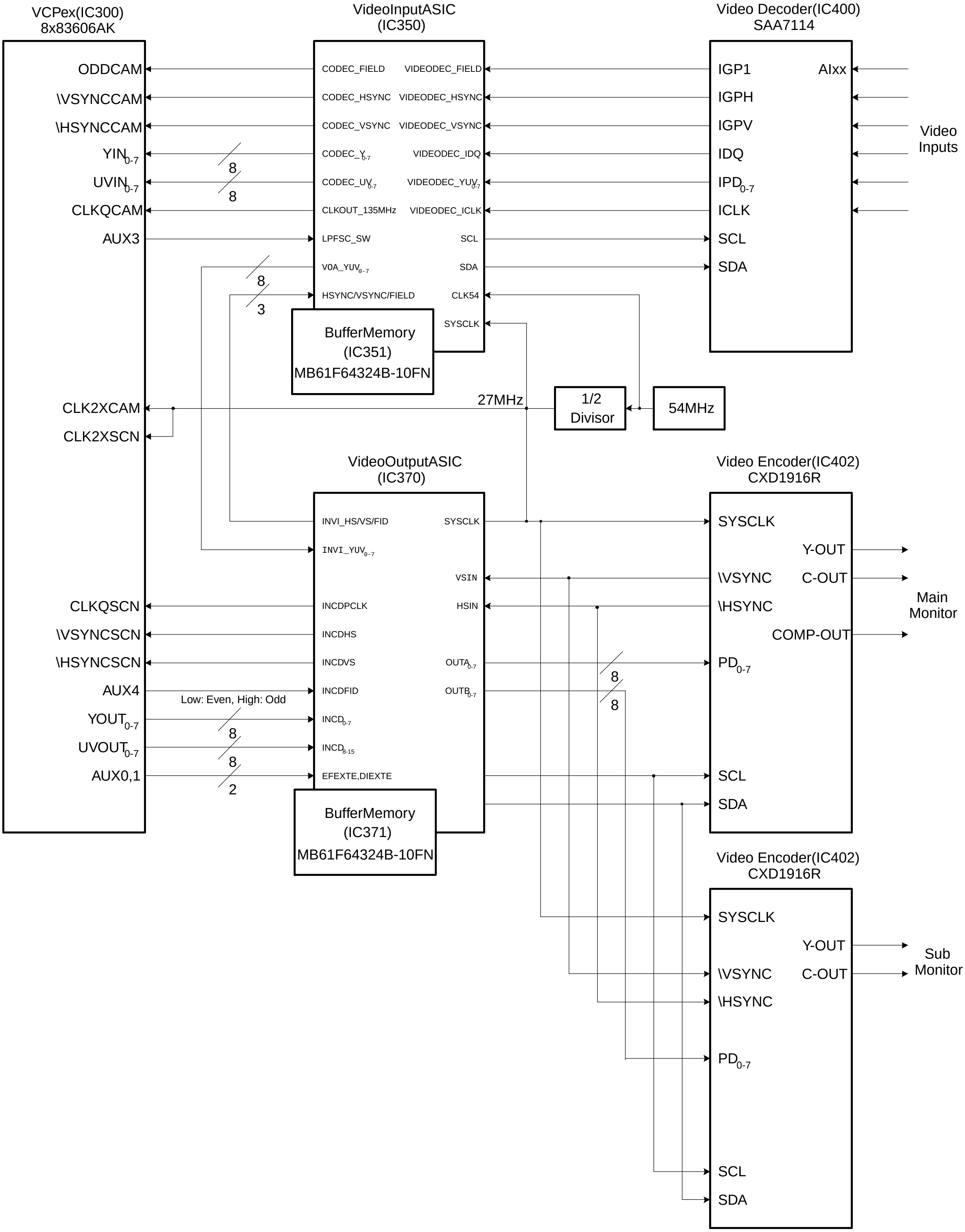
VCPex(IC300)
8x83606AK
ODDCAM
\VSYNCCAM
\HSYNCCAM
YIN0-7
UVIN0-7
CLKQCAM
AUX3
CLK2XCAM
CLK2XSCN
CLKQSCN
\VSYNCSCN
\HSYNCSCN
AUX4
YOUT0-7
UVOUT0-7
AUX0,1
VideoInputASIC
(IC350)
CODEC_FIELD
CODEC_HSYNC
CODEC_VSYNC
CODEC_Y0-7
CODEC_UV0-7
CLKOUT_135MHz
LPFSC_SW
V0A_YUV0-7
HSYNC/VSYNC/FIELD
VIDEODEC_FIELD
VIDEODEC_HSYNC
VIDEODEC_VSYNC
VIDEODEC_IDQ
VIDEODEC_YUV0-7
VIDEODEC_ICLK
SCL
SDA
CLK54
SYSCLK
BufferMemory
(IC351)
MB61F64324B-10FN
8
8
8
3
Video Decoder(IC400)
SAA7114
IGP1
IGPH
IGPV
IDQ
IPD0-7
ICLK
SCL
SDA
AIxx
Video
Inputs
27MHz
1/2
Divisor
54MHz
VideoOutputASIC
(IC370)
INVI_HS/VS/FID
INVI_YUV0-7
INCDPCLK
INCDHS
INCDVS
INCDFID
INCD0-7
INCD8-15
EFEXTE,DIEXTE
SYSCLK
VSIN
HSIN
OUTA0-7
OUTB0-7
Low: Even, High: Odd
8
8
2
8
8
BufferMemory
(IC371)
MB61F64324B-10FN
Video Encoder(IC402)
CXD1916R
SYSCLK
Y-OUT
\VSYNC
C-OUT
\HSYNC
COMP-OUT
PD0-7
SCL
SDA
Main
Monitor
Video Encoder(IC402)
CXD1916R
SYSCLK
Y-OUT
\VSYNC
C-OUT
\HSYNC
PD0-7
SCL
SDA
Sub
Monitor

Fig. 3-13 VIDEO Input/Output Interface

[VIDAD block]

The VIDAD block performs the video input signal selection, A/D conversion and converting the signal to Rec. 656 format. All of these functions performs by the Video Decoder (SAA7114). (Refer to Fig.3-14.) It also informs to the CPU directly whether selecting video input signal is sent or not.

The CPU performs setting to the Video Decoder via I2C bus of the VIA block.

Power supply voltage at +3.3 V-2 is supplied to the Video Decoder circuit and +5 V-3 is supplied to the input analog circuit.

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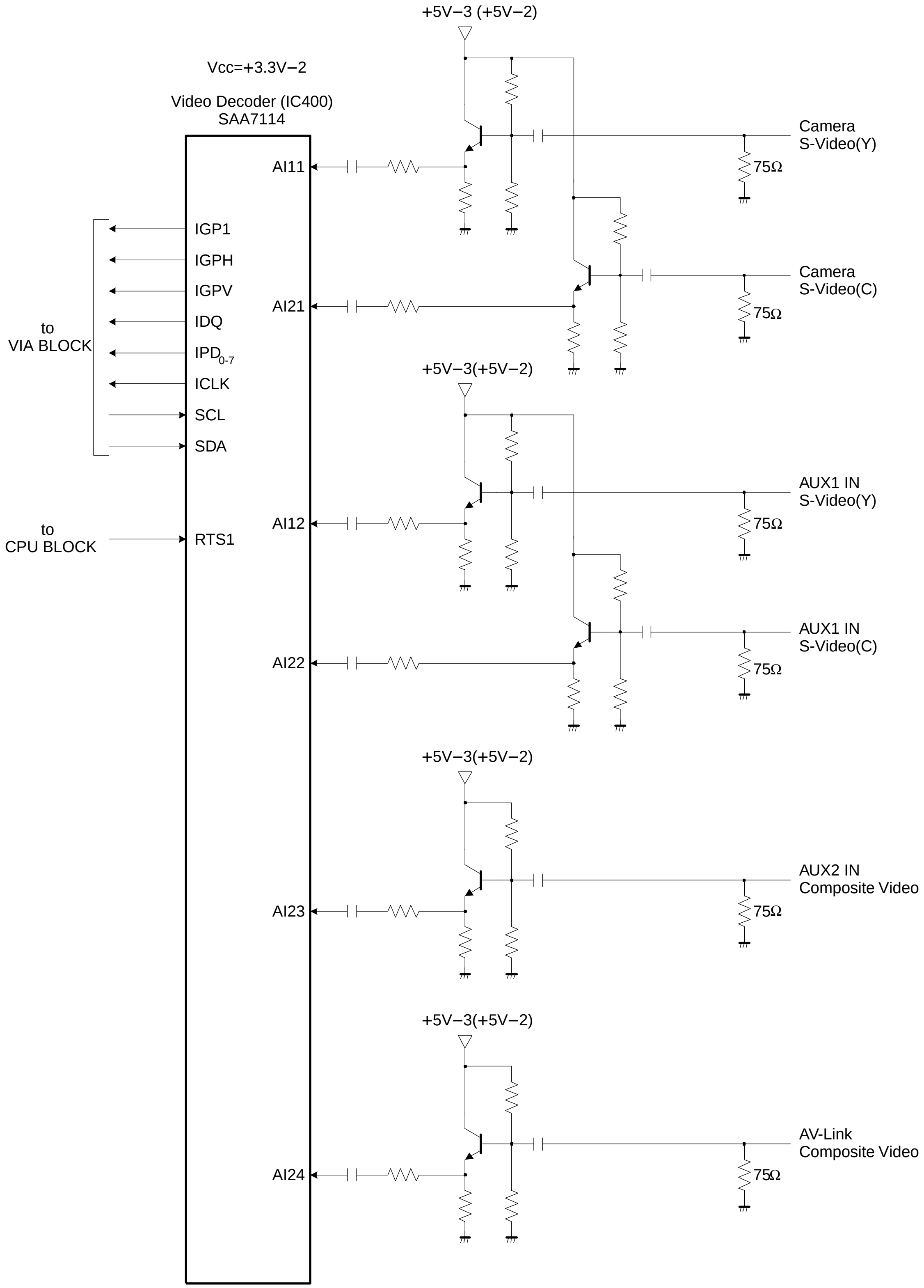

+5V–3 (+5V–2)
Vcc=+3.3V–2
Video Decoder (IC400)
SAA7114
AI11
Camera
S-Video(Y)
75Ω
IGP1
IGPH
IGPV
IDQ
IPD0-7
ICLK
SCL
SDA
to
VIA BLOCK
AI21
Camera
S-Video(C)
75Ω
+5V–3(+5V–2)
AUX1 IN
S-Video(Y)
AI12
75Ω
to
CPU BLOCK
RTS1
AUX1 IN
S-Video(C)
AI22
75Ω
+5V–3(+5V–2)
AUX2 IN
Composite Video
AI23
75Ω
+5V–3(+5V–2)
AV-Link
Composite Video
AI24
75Ω

Fig. 3-14 Video Input Block (Analog)

[VIDDA block]

The VIDDA block performs that the digital video signal (Rec.656) sent from the VOA block is converted from digital to analog signal and buffering it by video amplifier stage, then driving the video signal in 75 ohm load. (Refer to Fig.3-15.)

Two video encoders uses for Monitor1 and Monitor2.

It operates on +3.3 V-2 and +5 V-2 power supply voltages.

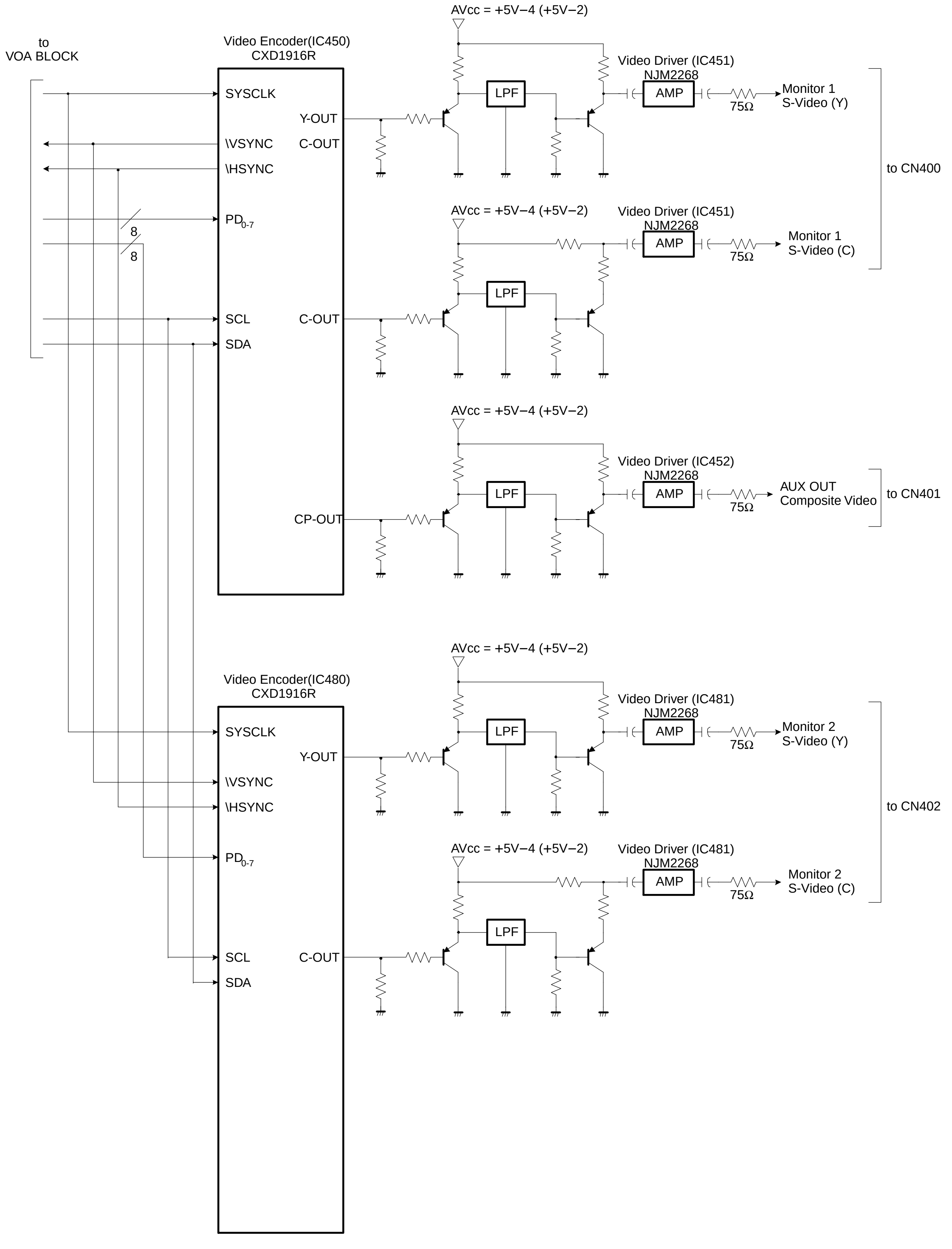

to
VOA BLOCK
Video Encoder(IC450)
CXD1916R
SYSCLK
\VSYNC
\HSYNC
PD0-7
8
8
SCL
SDA
Y-OUT
C-OUT
C-OUT
CP-OUT
AVcc = +5V–4 (+5V–2)
LPF
Video Driver (IC451)
NJM2268
AMP
75Ω
Monitor 1
S-Video (Y)
Monitor 1
S-Video (C)
to CN400
Video Driver (IC452)
NJM2268
AUX OUT
Composite Video
to CN401
Video Encoder(IC480)
CXD1916R
Video Driver (IC481)
NJM2268
Monitor 2
S-Video (Y)
Monitor 2
S-Video (C)
to CN402

Fig. 3-15 Video Output Block (ANALOG)

[AC block]

The AC block consists of combination of the Audio Codec DSP (IC520) and 256 kbit-SRAM (IC521), combination of the Audio Codec DSP (IC530) and 256 kbit-SRAM (IC531), VC/PLL (IC500) and Serial Timing Generator (IC501).

The Audio Codec DSPs (IC520, IC530) have the function of compression/decompression, decoding/coding of the audio data and generation of ringer tone or operating tone. 256 kbit-SRAMs (IC521, IC531) are used as the data processing buffer of DSPs. The program code that is reqired to operate the DSPs, is partly downloaded from the CPU and stored in RAM internal of the DSP. (A part of the program code has been masked in DSP.) The operating clock (7.5 MHz) of the DSPs (IC520, IC530) is supplied from the crystal oscillator X510. Resetting is performed by the “RES_AC” signal that is supplied from the CPU block. (Refer to Fig.3-16.)

Input and output of the audio signal to and from the DSPs (IC520, IC530) are performed in the form of a serial signal in all. Connection of the serial signal is shown in Fig.3-18. Serial signal of the EC block side performs receiving the before-compressed/coded (transmission) audio data from the Echo Canceller DSP (IC570) and transmission of the decompressed/decoded (receiving) audio data and other audio data such as ringer tone, etc., to the Echo Canceller DSP (IC570). Serial signal of the VCP block side performs transmission of the decompressed/coded (transmission) audio data to the VCPex (IC300) and receiving the before-decompressed/decoded (receiving) audio data from VCPex (IC300). The clock signal and the frame sync signals for the serial signals are generated by Serial Timing Generator (IC501). The frame sync signals that connection between AC block and EC block are synchronized with 8 kHz on the line, also the frame sync signals that connection between AC block and VCP block are synchronized with the trigger signal send from VCPex (IC300).

Serial Timing Generator (IC501) generates the serial timing signals using between the AD/DA-Converter (IC600) and Echo Canceller DSP (IC570), 8 kHz clock signal by using for internal processing of the Audio Codec DSPs (IC520, IC530), and 16 kHz clock signal by using for internal processing of the Echo Canceller DSPs (IC570, IC540).

The VCO/PLL (IC500) generates at 8.192 MHz clock that is phase-locked by PLL to 8 kHz clock (“LV_NET8K”) which is synchronized with the line signal sent from the NETIF block, then 8.192 MHz cock is sent to the Serial Timing Generator (IC501). The VCO/PLL (IC500) is controlled by the “/RES_AUDCLK” signal so that it makes to stop the oscillation during sleep mode.

It operates on +3.3 V-2 power supply voltage.

[EC block]

The EC block consists of combination of the Echo Canceller DSP1(IC570) and 256 kbit-SRAMs (IC571 to IC573), and combination of the Echo Canceller DSP2 (IC540) and 256 kbit-SRAMs (IC541 to IC543), so they performs removing of acoustic echo and reducing of audio noise. 256 kbit-SRAMs (IC571 to IC573, IC541 to IC543) are used for both data and code of the DSPs. The program code that is required to operate the DSP is downloaded from the CPU and stored in RAM internal of the DSP or 256 kbit-SRAM (IC571 to IC573, IC541 to IC543). The operation clock signal (40 MHz) of the DSPs (IC570, IC540) is supplied from the crystal oscillator (X540). Resetting is controlled by the “RES_EN” signal that is supplied from the CPU block (refer to Fig.3-17). Input and output of the audio signal to and from the DSPs (IC579, IC540) are performed in the form of a serial signal in all. Connection of the serial signal is shown in Fig.3-18. The serial signal at AC side block of the Echo Canceller DSP1 (IC570) perfroms transmission of the before-compressed/coded (transmission,after echo is removed) audio data to the Audio Codec DSPs (IC520, IC530), and receiving the decompressed/decoded (receiving) audio data and other audio data such as ringer tone etc. Also, between Echo Canceller DSP1 (IC570) and Echo Canceller DSP2 (IC600), the data that is required to share the processing is sent and received. The serial signal at AUANA block side performes transmitting and receiving the audio data between Echo Canceller DSP1 (IC570) and AD/DA-Converter (IC600). The clock and frame sync signal of the serial signal are supplied from Serial Timing Generator (IC501). It operates on +3.3 V-2 power supply voltage.

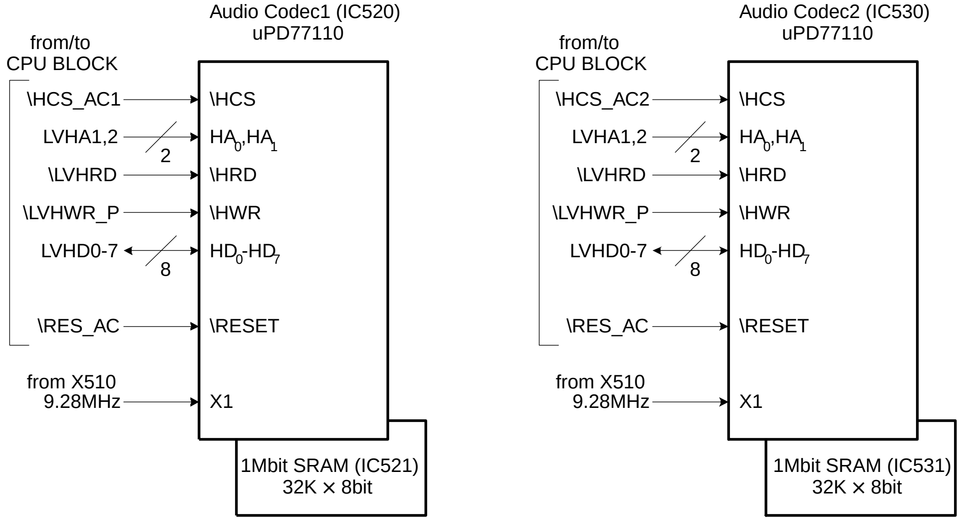

Audio Codec1 (IC520)
uPD77110
from/to
CPU BLOCK
\HCS_AC1
\HCS
LVHA1,2
2
HA0,HA1
\LVHRD
\HRD
\LVHWR_P
\HWR
LVHD0-7
8
HD0-HD7
\RES_AC
\RESET
from X510
9.28MHz
X1
1Mbit SRAM (IC521)
32K × 8bit
Audio Codec2 (IC530)
uPD77110
from/to
CPU BLOCK
\HCS_AC2
\HCS
LVHA1,2
2
HA0,HA1
\LVHRD
\HRD
\LVHWR_P
\HWR
LVHD0-7
8
HD0-HD7
\RES_AC
\RESET
from X510
9.28MHz
X1
1Mbit SRAM (IC531)
32K × 8bit

Fig. 3-16 Host Interface of AC Block

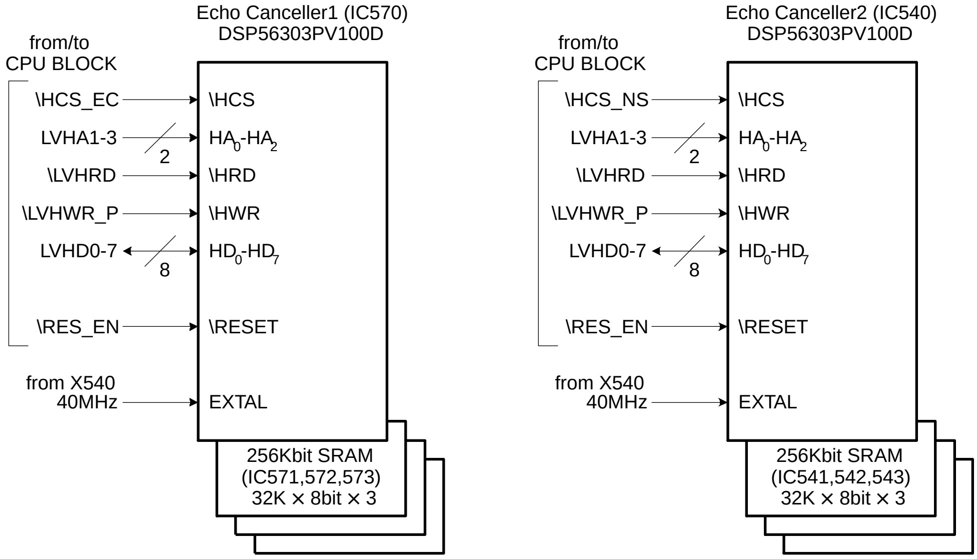

Echo Canceller1 (IC570)
DSP56303PV100D
from/to
CPU BLOCK
\HCS_EC
\HCS
LVHA1-3
2
HA0-HA2
\LVHRD
\HRD
\LVHWR_P
\HWR
LVHD0-7
8
HD0-HD7
\RES_EN
\RESET
from X540
40MHz
EXTAL
256Kbit SRAM
(IC571,572,573)
32K × 8bit × 3
Echo Canceller2 (IC540)
DSP56303PV100D
from/to
CPU BLOCK
\HCS_NS
\HCS
LVHA1-3
2
HA0-HA2
\LVHRD
\HRD
\LVHWR_P
\HWR
LVHD0-7
8
HD0-HD7
\RES_EN
\RESET
from X540
40MHz
EXTAL
256Kbit SRAM
(IC541,542,543)
32K × 8bit × 3

Fig. 3-17 Host Interface of EC Block

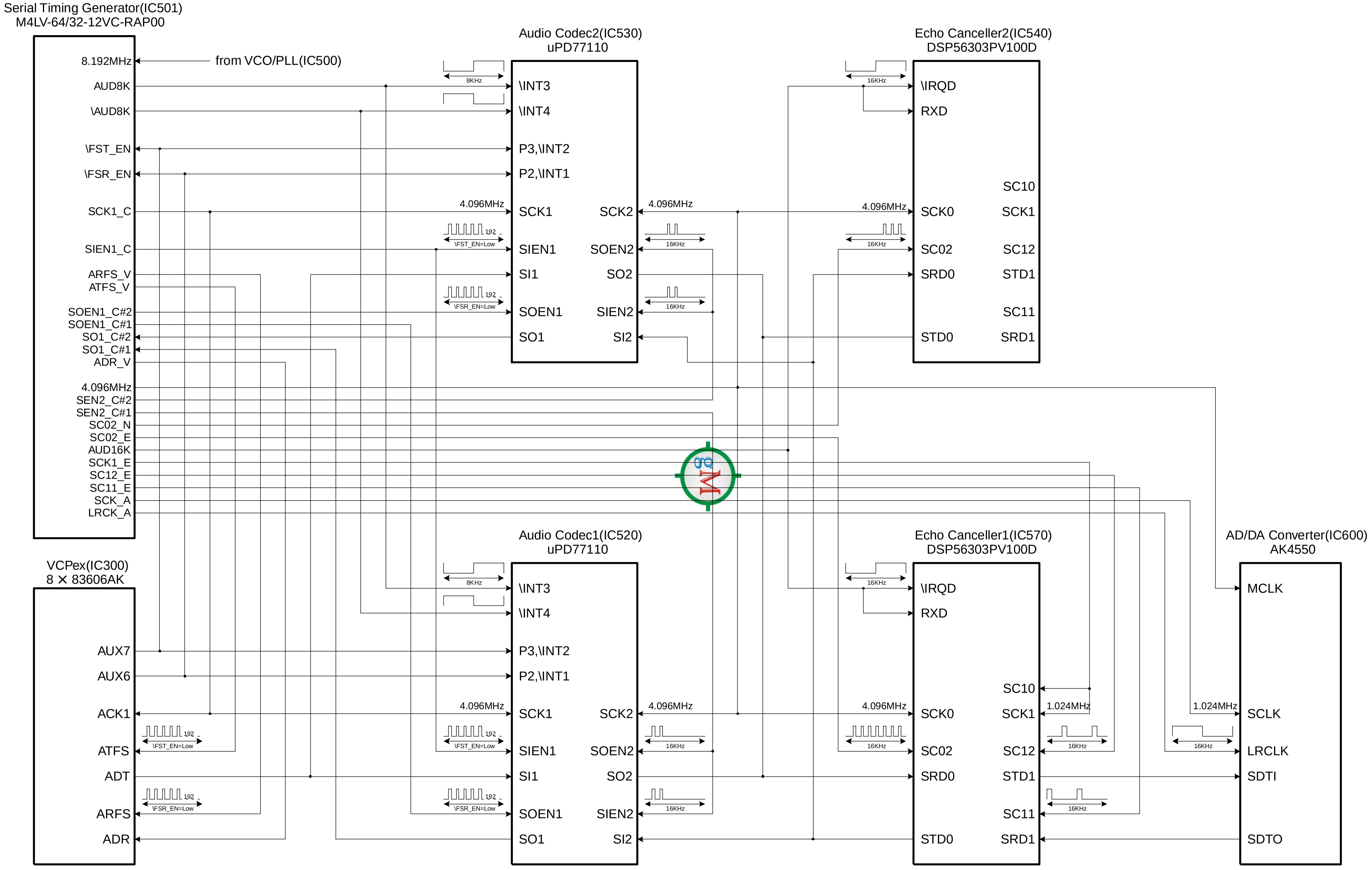

Serial Timing Generator(IC501)
M4LV-64/32-12VC-RAP00
8.192MHz
from VCO/PLL(IC500)
AUD8K
\AUD8K
\FST_EN
\FSR_EN
SCK1_C
SIEN1_C
ARFS_V
ATFS_V
SOEN1_C#2
SOEN1_C#1
SO1_C#2
SO1_C#1
ADR_V
4.096MHz
SEN2_C#2
SEN2_C#1
SC02_N
SC02_E
AUD16K
SCK1_E
SC12_E
SC11_E
SCK_A
LRCK_A
VCPex(IC300)
8 × 83606AK
AUX7
AUX6
ACK1
ATFS
ADT
ARFS
ADR
Audio Codec2(IC530)
uPD77110
Audio Codec1(IC520)
uPD77110
\INT3
\INT4
P3,\INT2
P2,\INT1
SCK1
SIEN1
SI1
SOEN1
SO1
SCK2
SOEN2
SO2
SIEN2
SI2
Echo Canceller2(IC540)
DSP56303PV100D
Echo Canceller1(IC570)
DSP56303PV100D
\IRQD
RXD
SCK0
SC02
SRD0
STD0
SC10
SCK1
SC12
STD1
SC11
SRD1
AD/DA Converter(IC600)
AK4550
MCLK
SCLK
LRCLK
SDTI
SDTO
8KHz
16KHz
4.096MHz
1.024MHz
192
\FST_EN=Low
\FSR_EN=Low

Fig. 3-18 Serial data connection of AC & EC Block

[AUANA block]

The AUANA block consists of the AD/DA-Converter (IC600), operational amplifiers (IC601 to IC603), Audio Selector (IC604), Audio Amplifier (IC605) and muting circuit. (Refer to Fig.3-19.)
The audio signal that is supplied from the built-in microphone (CN601), MIC1 and MIC2 connectors is amplified by the operational amplifier (IC601), and send to the Audio Selector (IC604) (MIC1 and MIC2 signals are mixed together). The Audio Selector (IC604) selects the audio signal in accordance with the port output from the VIDDA block (IC352). The selected audio signal is converted to differential signal which is controlled to suitable level for the A/D-Converter (IC600), by level control circuit consisting of the operational amplifier (IC602), then send to L channel of the A/D-Converter (IC600). The audio signal supplied from the AUDIO-IN connector is converted to differential signal which is controlled to suitable level for A/D-Converter, by level control circuit consisting of the operational amplifier (IC602), then send to R channel of A/D-Converter (IC600).
About 5.4 V DC supply voltage supplies to the built-in microphone (CN601). About 3 V DC supply voltage supplies to MIC1 and MIC2 connectors as it is plug-in powered on the audio signal.
Audio output signal appears from L channel of the D/A-Converter (IC600), amplified by the amplifier circuit consisting of the operational amplifier (IC603) and then feeds to AUDIO-OUT connector.
AUDIO-OUT signal can be muted by MUTE circuit that is controlled by the port output “OUT_MUTE” of NETIF block (IF750). Audio output signals for built-in speaker and recording appears from R channel of the D/A-Converter (IC600). Built-in speaker output is amplified by the Audio Amplifier (IC605), then drives the speaker (CN602). Speaker output can be muted by MUTE circuit that is controlled by the port output “SP_MUTE” of the NETIF block (IF750). The other side, recording output signal appears to the RECOUT (CN603) and it can be muted by MUTE circuit that is controlled by the port output “REC_MUTE” of the NETIF block (IF750). These are used to changing exclusive.
The operating clock signal (4.096 MHz) of the AD/DA-Converter (IC600) is supplied from the Serial Timing Generator (IC501). Also, AD/DA-Converter (IC600) can be reset by the “PWD_AK” signal that is supplied from the CPU block.
Power supply voltage at +3.3 V-2 DC supplies to the AD/DA-Converter (IC600) circuit. Other circuits of the AUANA block is supplied at +10 V DC power supply voltage.

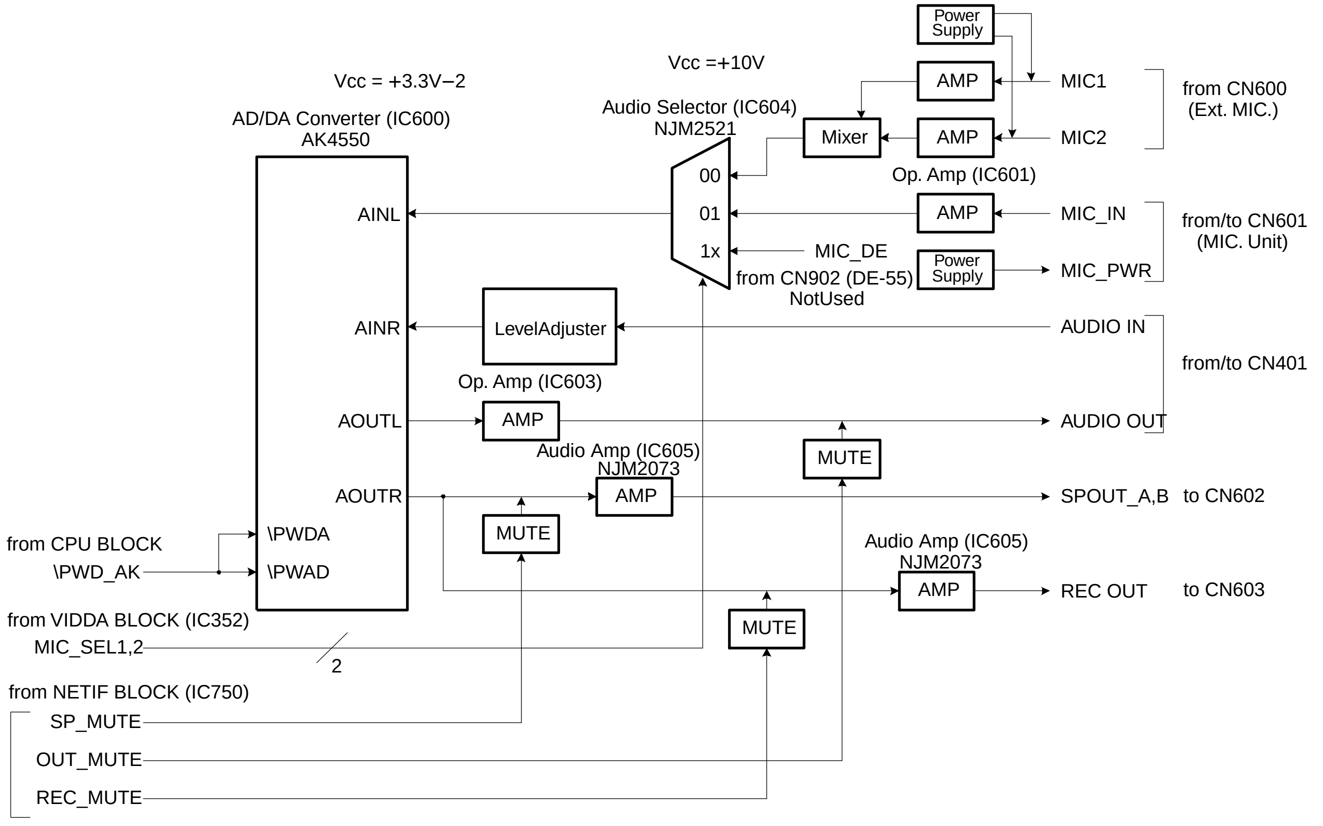

Power Supply
Vcc =+10V
AMP
MIC1
from CN600 (Ext. MIC.)
Vcc = +3.3V−2
Audio Selector (IC604) NJM2521
Mixer
AMP
MIC2
AD/DA Converter (IC600) AK4550
00
Op. Amp (IC601)
AINL
01
AMP
MIC_IN
from/to CN601 (MIC. Unit)
1x
MIC_DE
from CN902 (DE-55) NotUsed
Power Supply
MIC_PWR
AINR
LevelAdjuster
AUDIO IN
from/to CN401
Op. Amp (IC603)
AOUTL
AMP
AUDIO OUT
Audio Amp (IC605) NJM2073
MUTE
AOUTR
AMP
SPOUT_A,B
to CN602
from CPU BLOCK
\PWDA
MUTE
Audio Amp (IC605) NJM2073
\PWD_AK
\PWAD
AMP
REC OUT
to CN603
from VIDDA BLOCK (IC352)
MUTE
MIC_SEL1,2
2
from NETIF BLOCK (IC750)
SP_MUTE
OUT_MUTE
REC_MUTE

Fig. 3-19 Host Interface of AC Block

3-2-2. Overall Function of IPM-92A and IPM-93A Boards (Infrared IR Receiver Board)

The block diagram of the IPM-92A, IPM-93A and DE-55 boards is shown in Fig. 3-20.

The infrared signal is converted to an electrical signal by D701 and D801 (photodiode: PP701). The electrical signal is amplified by [PRE AMP] and sent to the DE-55 board. D701 and D801 are reverse-biased by the ANALOG_27 V (27 ±3 V) that is generated by the DE-55 board.

3-2-3. Overall Function of DE-55 Board (FM Demodulator Board)

IC301 generates a rectangular wave of about 9 kHz to which a DC component is superimposed by D301, D302, C304 to C306 in order to generate and apply the reverse-bias (ANALOG_27 V (27 ±3 V)) across the photodiode on the IPM-92A and IPM-93A boards. [STEP-UP]

The electrical signal (TP401, TP421) that is converted by the IPM-92A and IPM-93A boards is separated of its carrier bandwidth signal only [BPF], and amplified by about 10 dB [RF_AMP].

These signals (TP401, TP421) are added together. However, the waveform after the signal component below 4.1 V is sliced and removed when the input infrared light intensity is high (TP101).
The added signal is amplified by IC101 (MC10H105MEL) and its amplitude limited [LIMITER] in order to generate the rectangular wave of 0.8 Vp-p (TP102).

In the demodulator IC121 (MC10M107MEL), the signal whose phase is delayed by the two-stage delay elements consisting of resistor and capacitor, and the direct signal that is input after a simple buffer are logic-EXNORed. [DEMODULATOR]

The output signal (TP121) of the EXNOR gate is the demodulated signal that still includes the high frequency component. Only the video signal bandwidth is separated and the video signal is obtained. [LPF (integrator)]

Because the demodulated output signal (TP141) is emphasized by the infrared transmitter, the high frequency component is removed at the first stage of IC141 (TK15403MTL) to restore the original video waveform (TP142). [DE_EMPHASIS]

The restored video signal is amplified by the second and the third stage of IC141 (TK15403MTL) by about 14 dB so that output of 1 Vp-p (TP143) is obtained across the 75 Ω termination. [VIDEO AMP]

The video output signal from the first stage is amplified up to 2 Vp-p from which the simple signal detection is performed by the circuit block that has the parts reference number of the 160 series. Detection whether video signal is present or not, is performed by this circuit. When the presence of video signal is not detected, the signal output is muted. [MUTE CONTROL]

3-2-4. Overall Function of RX-47A Board

The SIRCS signal that is transmitted from the remote commander is converted from the infrared signal to the electrical signal and is sent to the MA-107/107P board via the buffer.

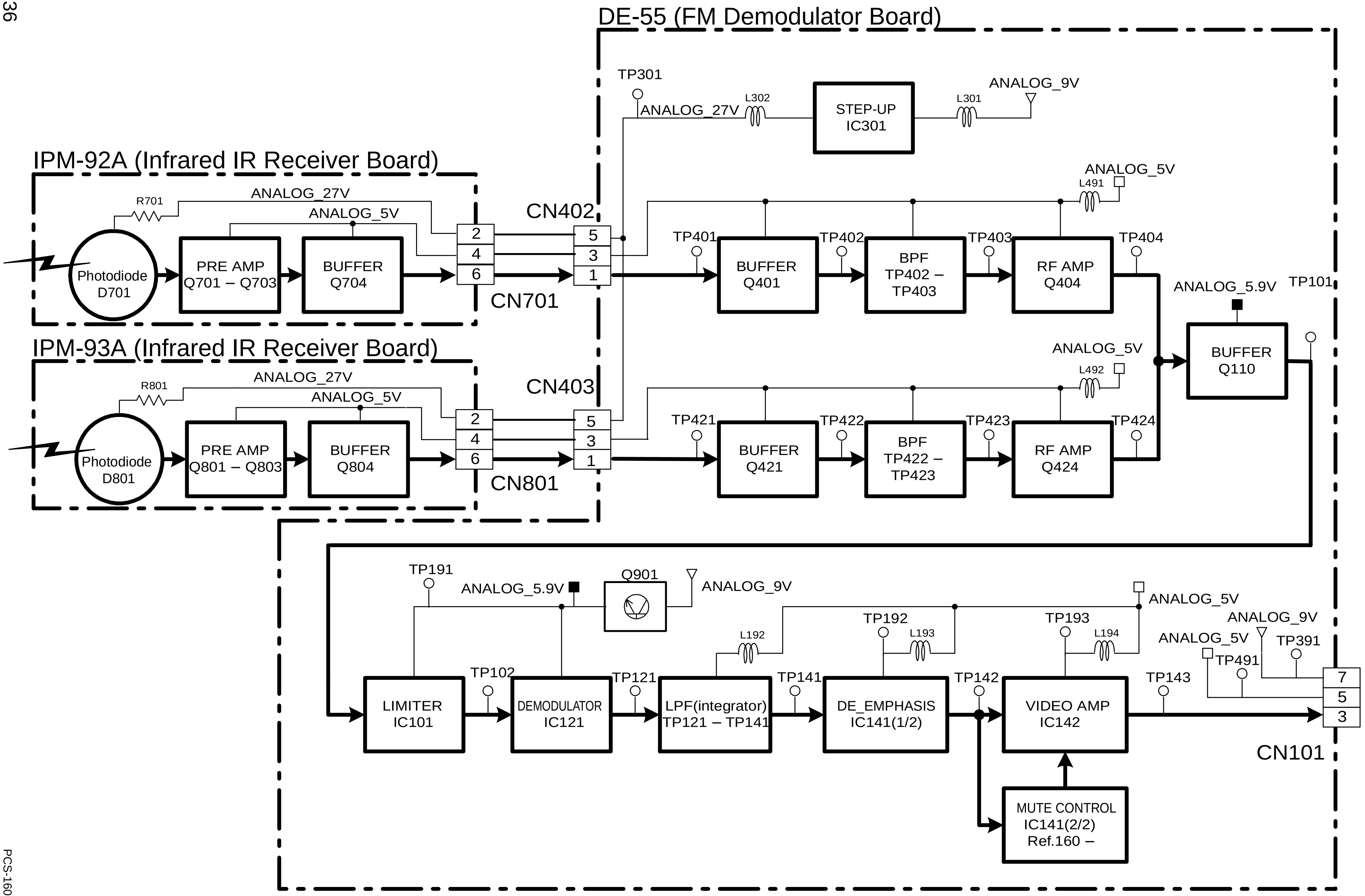

DE-55 (FM Demodulator Board)
IPM-92A (Infrared IR Receiver Board)
IPM-93A (Infrared IR Receiver Board)
Photodiode D701
R701
ANALOG_27V
ANALOG_5V
PRE AMP Q701 – Q703
BUFFER Q704
2
4
6
CN701
CN402
5
3
1
Photodiode D801
R801
ANALOG_27V
ANALOG_5V
PRE AMP Q801 – Q803
BUFFER Q804
2
4
6
CN801
CN403
5
3
1
TP301
ANALOG_27V
L302
STEP-UP IC301
L301
ANALOG_9V
ANALOG_5V
L491
TP401
BUFFER Q401
TP402
BPF TP402 – TP403
TP403
RF AMP Q404
TP404
ANALOG_5V
L492
TP421
BUFFER Q421
TP422
BPF TP422 – TP423
TP423
RF AMP Q424
TP424
ANALOG_5.9V
BUFFER Q110
TP101
TP191
ANALOG_5.9V
Q901
ANALOG_9V
LIMITER IC101
TP102
DEMODULATOR IC121
TP121
LPF(integrator) TP121 – TP141
L192
TP141
DE_EMPHASIS IC141(1/2)
TP192
L193
TP142
VIDEO AMP IC142
TP193
L194
ANALOG_5V
MUTE CONTROL IC141(2/2) Ref.160 –
TP143
ANALOG_5V
TP491
ANALOG_9V
TP391
7
5
3
CN101

Fig. 3-20 Infrared sIgnal demodulation Block

http://getMANUAL.com

3-2-5. Overall Function of IF-823 Board

[System outline]

The IF-823 board is an ISDN communication interface board of the compact processor (PCS-P160/P160P), and is installed in the optional interface MA-107/107P board. The IF-823 board has two BRI ports that realize the 3 BRIs (6B) connection with the port on the MA-107/107P board. Call control over the line is performed by the I-Interface LSI HD81504 (IC100, IC200) and the two externally connected RAMs. The call control firmware is downloaded from the host to one of the two RAMs. The other RAM is used as the work area of the I-Interface LSI HD81504. Data (the B-channel data) flows as follows: When a call connection is established, the received signal is sent to the option interface MA-107/107P from the I-Interface LSI HD81504, then is sent to TDM ASIC on the MA-107/107P board. The transmission signal flows in the reverse signal path as described above. The IF-823 board consists of the analog line block, the CPU block, the receive call detection and memory check block and the bus control block. Functions of the respective circuit blocks are described as follows:

1. Analog line block

The signal of the primary side that is received from the line and the signal of the secondary side that is transmitted from the I-Interface LSI HD81504 (IC100, IC200) are level-shifted by the respective transformers (T100, T200) and are sent to the secondary side and the primary side respectively. The EMI filters (FL100, FL200) remove the noise included that is output to the line.

2. CPU block

The CPU block consists of the I-Interface LSI HD81504 (IC100, IC200) and the two SRAMs. The ISDN call control firmware is stored in one of the two SRAMs (IC101, IC201) and the other SRAM (IC102, IC202) is used as the RAM area of the I-Interface LSI HD81504. The firmware is downloaded from the MA-107/107P board flash memory to the RAM that the I-Interface LSI HD81504 (IC100, IC200) uses as a ROM area.

3. Receive call detection and memory check blocks

When data arrives, receive call detection is performed. The receive call interrupt signal is sent to the TDM ASIC of the MA-107/107P board where the receive call detection signal is set in the register (IC312). After the firmware is downloaded, the memory check is performed on the RAM area. The result OK or NG of the memory check is set in a register. The receive call and the result of memory check can be confirmed when the host CPU reads the data that is set in the register.

4. Bus control block

The PLD (IC312) has the functions of address decoding, host bus control, the address settings for downloading and register. The host bus control function involves separating the local bus that connects the I-Interface LSI HD81504 (IC100, IC200) with the SRAM when downloading the firmware to the SRAM, or directly connecting the host bus to the SRAM or returning the connection to the original one. The downloading address setting function sets the address (A0 to A14) of the SRAM by performing the address setting twice. The first address setting sets the higher addresses of A14 to A8 and the second address setting sets the lower addresses of A7 to A0. The bus control block has downloading setting register and receive call detection/memory check registers.

The block diagram of the IF-823 board is shown in Fig. 3-21.

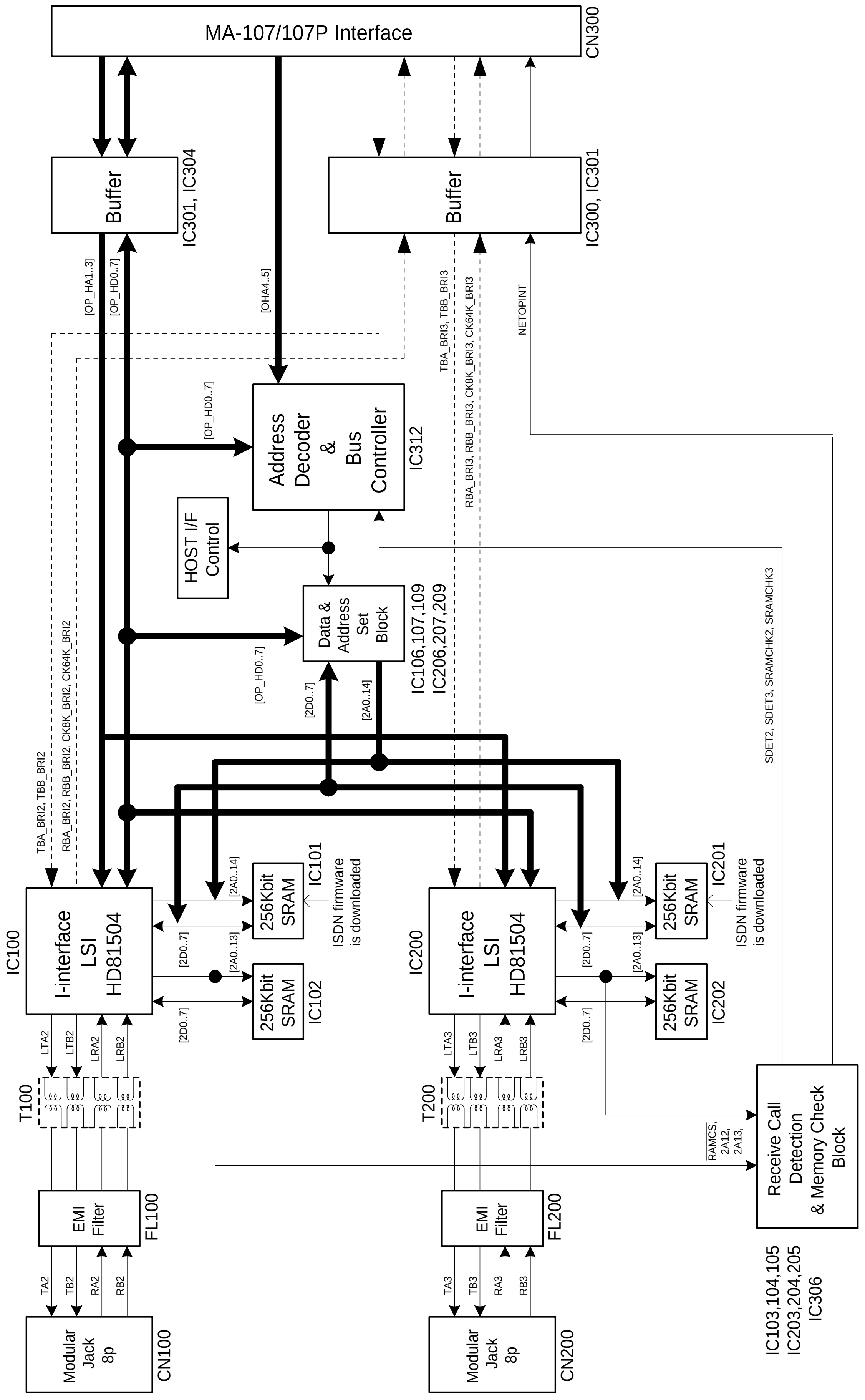

MA-107/107P Interface
CN300
Buffer
IC301, IC304
Buffer
IC300, IC301
[OP_HA1..3]
[OP_HD0..7]
[OHA4..5]
TBA_BRI3, TBB_BRI3
RBA_BRI3, RBB_BRI3, CK8K_BRI3, CK64K_BRI3
NETOPINT
[OP_HD0..7]
Address
Decoder
&
Bus
Controller
IC312
HOST I/F
Control
Data &
Address
Set
Block
IC106,107,109
IC206,207,209
[OP_HD0..7]
[2D0..7]
[2A0..14]
TBA_BRI2, TBB_BRI2
RBA_BRI2, RBB_BRI2, CK8K_BRI2, CK64K_BRI2
SDET2, SDET3, SRAMCHK2, SRAMCHK3
I-interface
LSI
HD81504
IC100
[2A0..14]
[2D0..7]
[2A0..13]
[2D0..7]
256Kbit
SRAM
IC101
ISDN firmware
is downloaded
256Kbit
SRAM
IC102
I-interface
LSI
HD81504
IC200
[2A0..14]
[2D0..7]
[2A0..13]
[2D0..7]
256Kbit
SRAM
IC201
ISDN firmware
is downloaded
256Kbit
SRAM
IC202
LTA2
LTB2
LRA2
LRB2
T100
LTA3
LTB3
LRA3
LRB3
T200
EMI
Filter
FL100
EMI
Filter
FL200
TA2
TB2
RA2
RB2
TA3
TB3
RA3
RB3
Modular
Jack
8p
CN100
Modular
Jack
8p
CN200
RAMCS,
2A12,
2A13,
Receive Call
Detection
& Memory Check
Block
IC103,104,105
IC203,204,205
IC306

Fig. 3-21 IF-823 Board Block Diagram

3-2-6. Overall Function of IF-824 Board

[System outline]

The IF-824 board is the communication interface board that establishes the communication interface between the compact processor (PCS-P160/P160P) and terminal adapter (TA) that has the V.35 interface. The IF-824 board is installed as an optional interface of the MA-107/107P board. The number of connection ports of the IF-824 board is one. When establishing connection with the IF-824 board without using call control, only the V.35 interface is used. If you want automatic dialing and reception using call control, connect the IF-824 board using the V.35 interface and the RS-366 interface. The IF-824 board consists of the transceiver block, receive call detection block, host interface block and voltage converter block.

The functions of the respective circuit blocks are described below.

1. Transceiver block

The characteristics of both the transmitting and receiving signal, are converted between the balanced transmission signal (conforming to the V.35 electrical characteristics) and the digital TTL level by the V.35 transceiver (IC101). The signal transmission is performed in the form of a balanced signal in which the signal amplitude must swing both in the positive and negative directions. It requires ±5 V power supply voltage for the V.35 transceiver (IC101). On the other hand, all of the call control signals are unbalanced transmission signals (conforming to the V.28 electrical characteristics) that can be directly interfaced with the EIA-232C electrical characteristics. Therefore, conversion between the V.28 electrical characteristics and the TTL level is performed using the EIA-232C transceivers (IC200, IC201, IC202, and IC203).

2. Receive call detection and memory check blocks

When either RI that is the V.35 interface control signal or DLO that is the RS-366 interface control signal goes active, these circuit blocks (IC204, IC205 and IC206) activates the receive call interrupt signal to notify the TDM ASIC of the MA-107/107P board and also the host interface of the reception of data.

3. Host interface block

The PLD (IC105) has the control function over the host interface, and an address decoder function and four I/O ports.

4. Voltage converter block

Because the power supply voltage that is introduced to this board is only the single +5 V DC, −5 V power is generated using the charge-pump type voltage converter (IC100).

The block diagram of the IF-824 board is shown in Fig. 3-22.

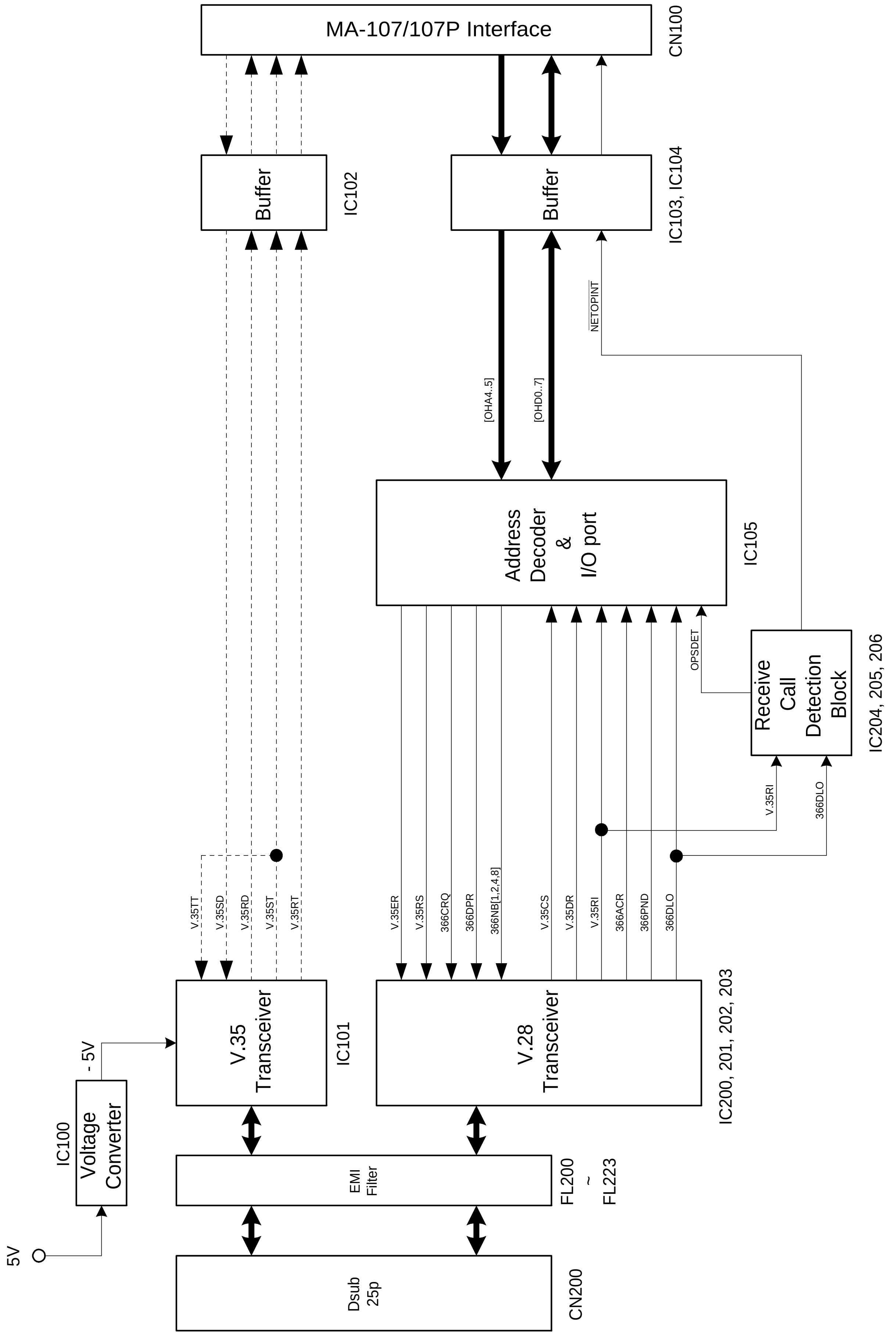
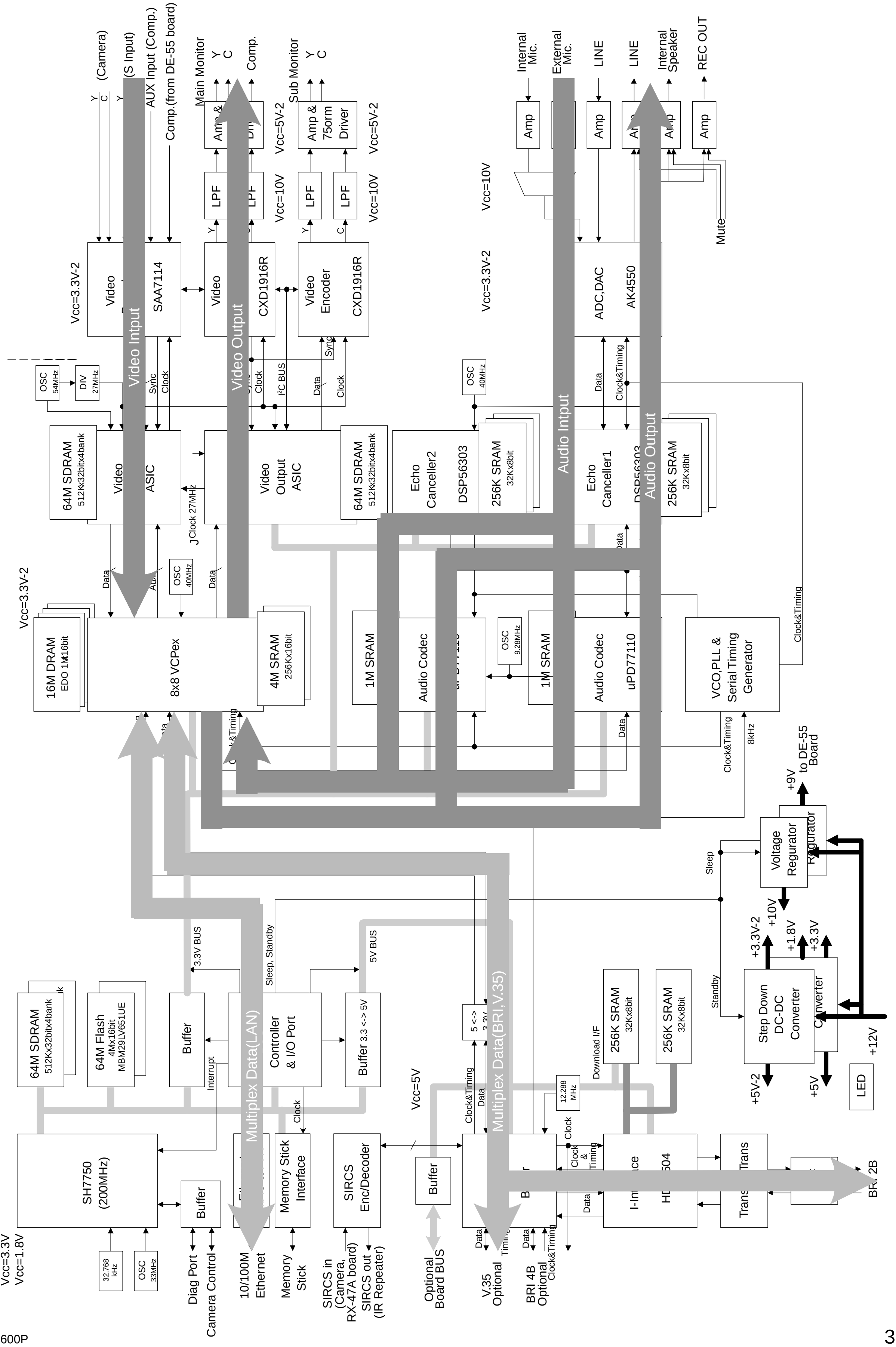

MA-107/107P Interface
CN100
Buffer
IC102
Buffer
IC103, IC104
NETOPINT
[OHA4..5]
[OHD0..7]
Address
Decoder
&
I/O port
IC105
OPSDET
Receive
Call
Detection
Block
IC204, 205, 206
V.35RI
366DLO
V.35TT
V.35SD
V.35RD
V.35ST
V.35RT
V.35ER
V.35RS
366CRQ
366DPR
366NB[1,2,4,8]
V.35CS
V.35DR
V.35RI
366ACR
366PND
366DLO
V.35
Transceiver
IC101
V.28
Transceiver
IC200, 201, 202, 203
- 5V
Voltage
Converter
IC100
EMI
Filter
FL200
~
FL223
5V
Dsub
25p
CN200

Fig. 3-22 IF-824 Board Block Diagram

3-3. Signal Flow of Communication Data


(Camera)
(S Input)
AUX Input (Comp.)
Comp.(from DE-55 board)
Main Monitor
Y
C
Comp.
Sub Monitor
Y
C
Amp &
Driver
Amp &
75orm
Driver
Vcc=5V-2
LPF
Vcc=10V
Video
Decoder
SAA7114
Video
Encoder
CXD1916R
Vcc=3.3V-2
OSC 54MHz
DIV 27MHz
Sync
Clock
I²C BUS
Data
Video Intput
Video Output
64M SDRAM
512Kx32bitx4bank
Video
Input
ASIC
Clock 27MHz
Video
Output
ASIC
OSC 40MHz
16M DRAM
EDO 1Mx16bit
8x8 VCPex
4M SRAM
256Kx16bit
Clock&Timing
Internal Mic.
External Mic.
LINE
Internal Speaker
REC OUT
Amp
Mute
ADC,DAC
AK4550
Clock&Timing
Echo
Canceller2
DSP56303
256K SRAM
32Kx8bit
Echo
Canceller1
DSP56303
Audio Intput
Audio Output
1M SRAM
Audio Codec
uPD77110
OSC 9.28MHz
VCO,PLL &
Serial Timing
Generator
8kHz
+9V
to DE-55 Board
Voltage
Regurator
Sleep
+10V
+3.3V-2
+1.8V
+3.3V
Standby
Step Down
DC-DC
Converter
+5V-2
+5V
+12V
LED
64M SDRAM
512Kx32bitx4bank
64M Flash
4Mx16bit
MBM29LV651UE
3.3V BUS
Buffer
Interrupt
Sleep, Standby
Controller
& I/O Port
5V BUS
Buffer 3.3 <-> 5V
Vcc=5V
5 <-> 3.3V
Clock&Timing
Data
Multiplex Data(LAN)
Multiplex Data(BRI,V.35)
Download I/F
256K SRAM
32Kx8bit
12.288 MHz
Clock
Clock & Timing
SH7750
(200MHz)
Buffer
Ethernet
Memory Stick
Interface
SIRCS
Enc/Decoder
Buffer
I-Interface
HD...504
Trans
BRI 2B
Vcc=3.3V
Vcc=1.8V
32.768 kHz
OSC 33MHz
Diag Port
Camera Control
10/100M
Ethernet
Memory
Stick
SIRCS in
(Camera,
RX-47A board)
SIRCS out
(IR Repeater)
Optional
Board BUS
V.35
Optional
BRI 4B
Optional
Timing

gM

Section 4
Troubleshooting

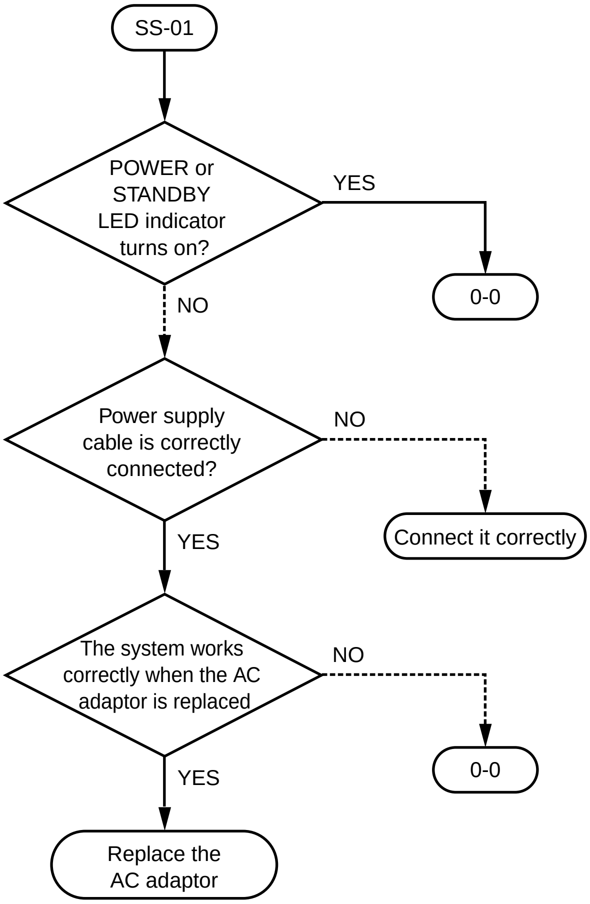
4-1. Check Items Before Starting Self-diagnostics

1. Be sure to check the following items before starting the self-diagnostics.

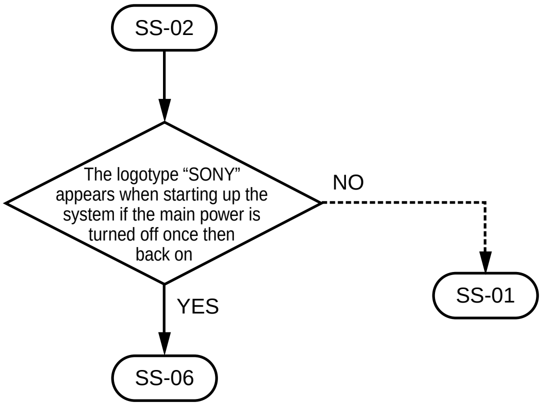
Major trouble symptoms when errors occur

Symptom	Flow chart
1. The main power cannot be turned on even the POWER switch of processor is pressed. (The logotype "SONY" does not appear.)	SS-01
2. The main power cannot be turned on even the "POWER" button of remote commander is pressed.	SS-02
3. The main power cannot be turned on at the event of automatic receive call.	SS-03
4. The main power of monitor or TV is not turned on when the main power is turned on.	SS-04
5. When the main power is turned on, the logotype "SONY" appears but the picture from camera does not appears.	SS-05
6. The PCS-1600/1600P system cannot be controled by remote commander.	SS-06
7. Camera control cannot be operated.	SS-07
8. Cannot connect to line (ISDN).	SS-08
9. Cannot connect to the circuit (LAN).	SS-09
10. Cannot connect to the circuit (V.35).	SS-10
11. After line is connected, picture from a remote side cannot be displayed normally, or picture cannot be sent to a remote side.	SS-11
12. Video input (AUX-1, AUX-2, AV-link) picture is not displayed. However, the camera picture is normally displayed.	SS-12
13. After line is connected, any voice cannot be heard from a remote side.	SS-13
14. After line is connected, any voice cannot be sent to a remote side.	SS-14
15. External microphone cannot be used.	SS-15

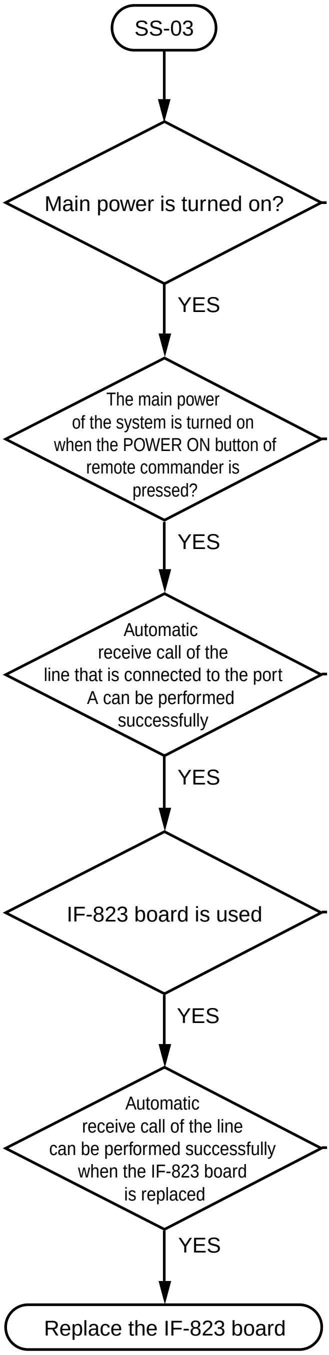
Symptom: The main power cannot be turned on even the POWER switch of processor is pressed.
(The logotype “SONY” does not appear.)


SS-01
POWER or STANDBY LED indicator turns on?
YES
0-0
NO
Power supply cable is correctly connected?
NO
Connect it correctly
YES
The system works correctly when the AC adaptor is replaced
NO
0-0
YES
Replace the AC adaptor

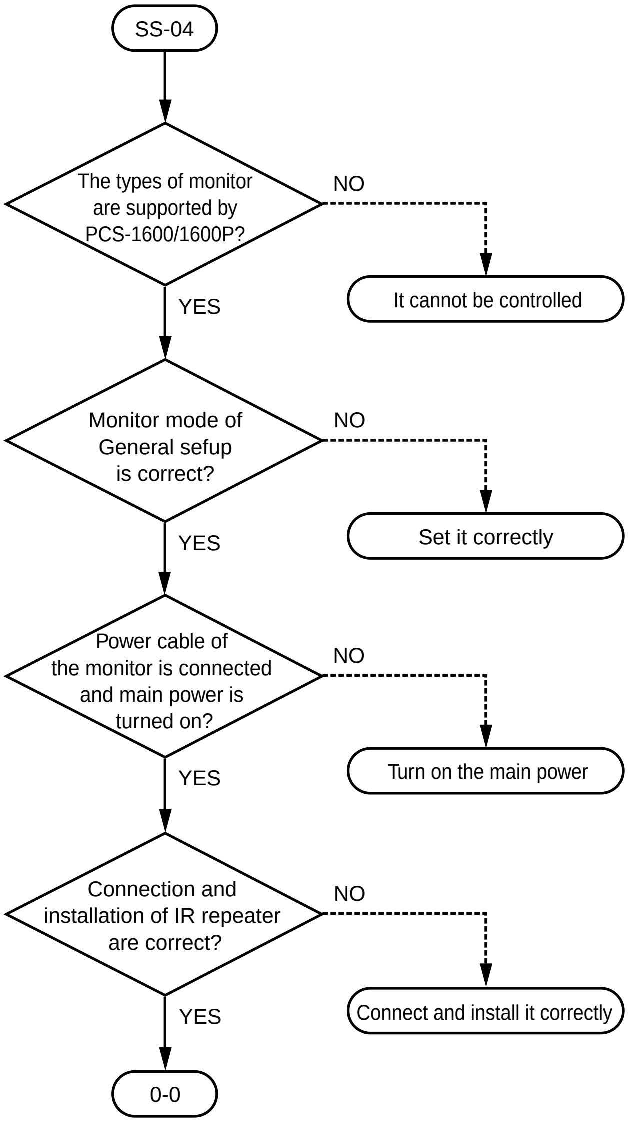
Symptom: The main power cannot be turned on even the “POWER” button of remote commander is pressed.


SS-02
The logotype “SONY” appears when starting up the system if the main power is turned off once then back on
NO
SS-01
YES
SS-06

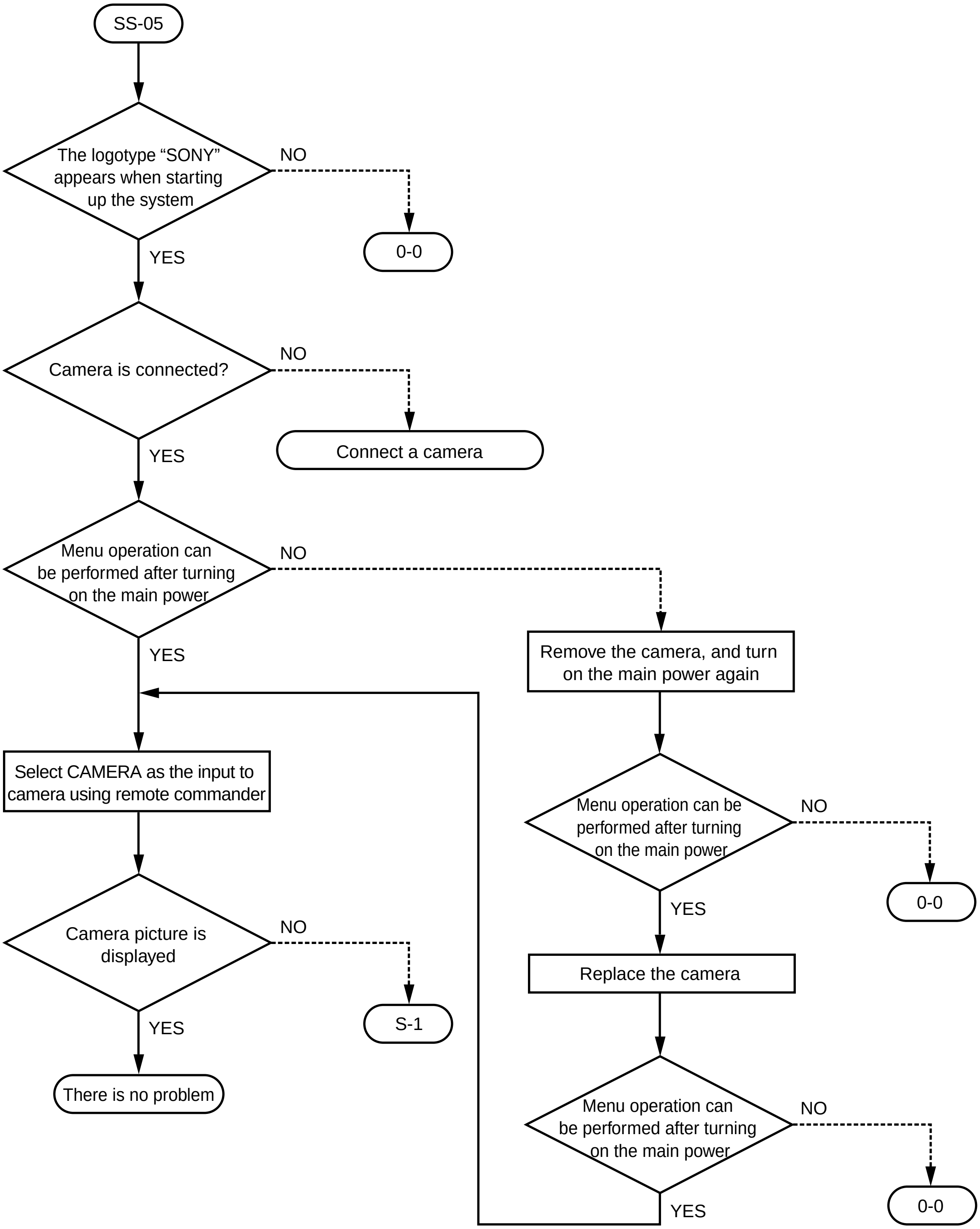
Symptom: The main power cannot be turned on at the event of automatic receive call.


SS-03
Main power is turned on?
NO
Turn on the main power
YES
The main power of the system is turned on when the POWER ON button of remote commander is pressed?
NO
SS-02
YES
Automatic receive call of the line that is connected to the port A can be performed successfully
NO
0-0
YES
IF-823 board is used
NO
There is no problem
YES
Automatic receive call of the line can be performed successfully when the IF-823 board is replaced
NO
0-0
YES
Replace the IF-823 board

Symptom: The main power of monitor or TV is not turned on when the main power is turned on.


SS-04
The types of monitor are supported by PCS-1600/1600P?
NO
It cannot be controlled
YES
Monitor mode of General sefup is correct?
NO
Set it correctly
YES
Power cable of the monitor is connected and main power is turned on?
NO
Turn on the main power
YES
Connection and installation of IR repeater are correct?
NO
Connect and install it correctly
YES
0-0

Symptom: When the main power is turned on, the logotype “SONY” appears but the picture from camera does not appears.


SS-05
The logotype “SONY” appears when starting up the system
NO
0-0
YES
Camera is connected?
NO
Connect a camera
YES
Menu operation can be performed after turning on the main power
NO
Remove the camera, and turn on the main power again
YES
Select CAMERA as the input to camera using remote commander
Menu operation can be performed after turning on the main power
NO
0-0
YES
Replace the camera
Camera picture is displayed
NO
S-1
YES
There is no problem
Menu operation can be performed after turning on the main power
NO
0-0
YES

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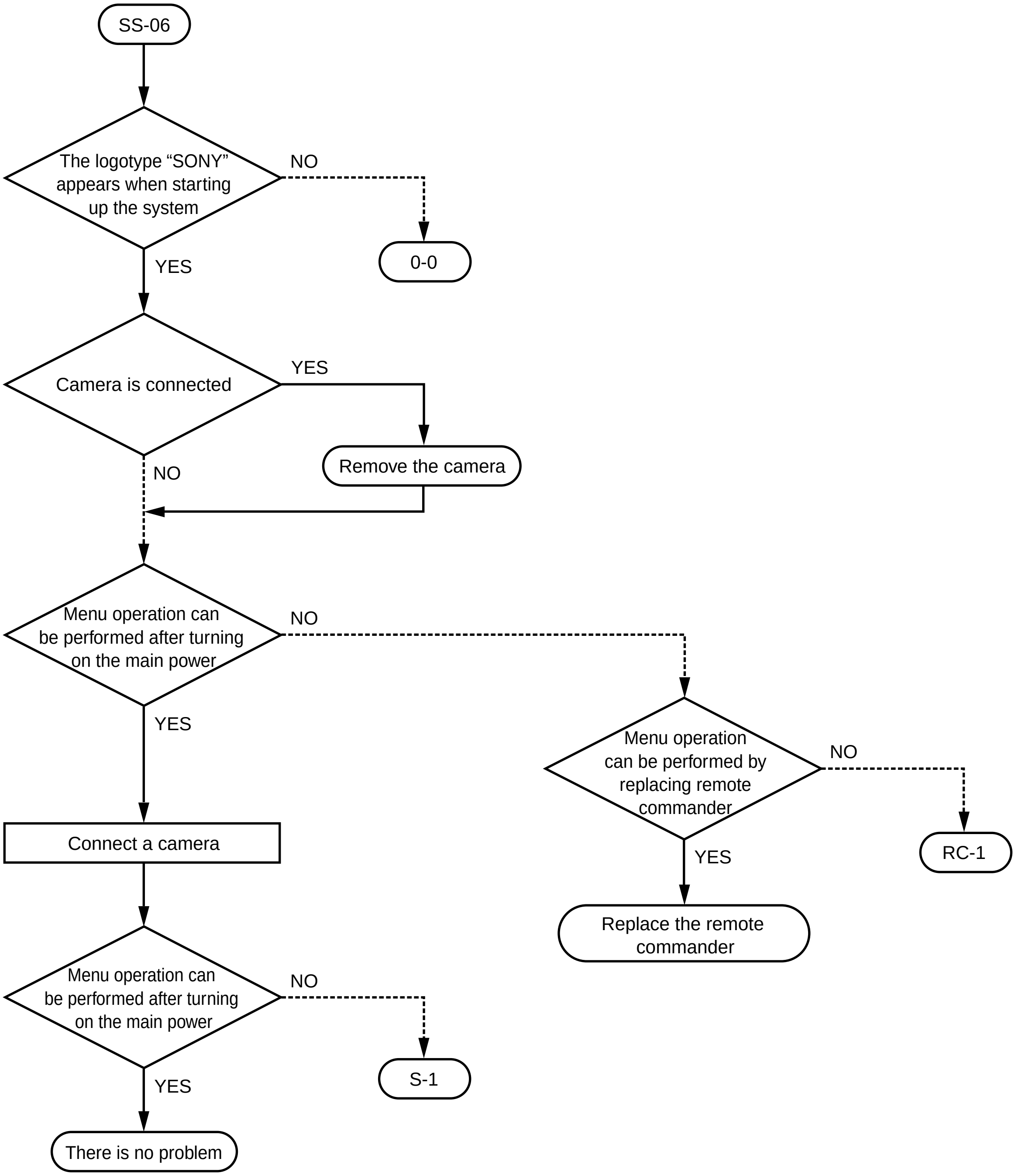
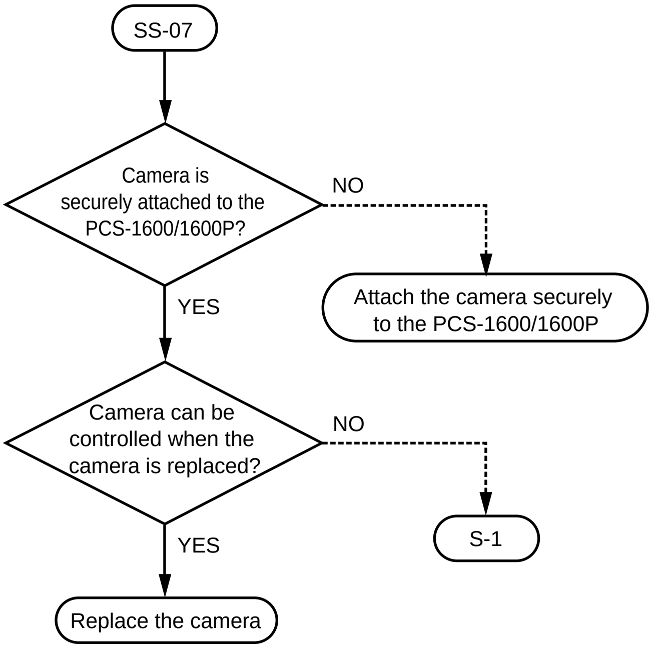
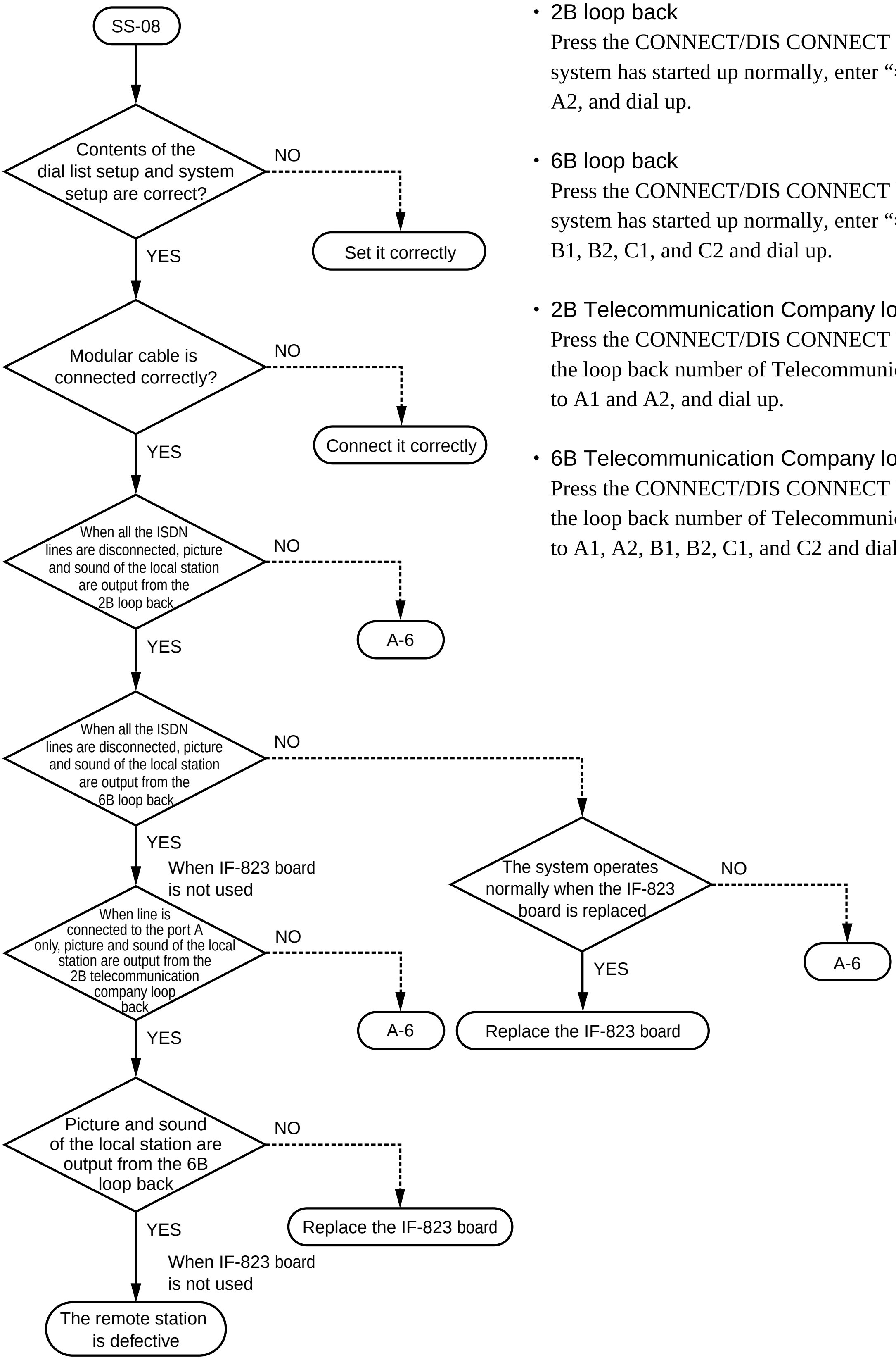
Symptom: The PCS-1600/1600P system cannot be controled by remote commander.


SS-06
The logotype "SONY" appears when starting up the system
NO
0-0
YES
Camera is connected
YES
Remove the camera
NO
Menu operation can be performed after turning on the main power
NO
YES
Menu operation can be performed by replacing remote commander
NO
RC-1
YES
Replace the remote commander
Connect a camera
Menu operation can be performed after turning on the main power
NO
S-1
YES
There is no problem

Symptom: Camera control cannot be operated.


SS-07
Camera is securely attached to the PCS-1600/1600P?
NO
Attach the camera securely to the PCS-1600/1600P
YES
Camera can be controlled when the camera is replaced?
NO
S-1
YES
Replace the camera

Symptom: Cannot connect to line (ISDN).


SS-08
Contents of the dial list setup and system setup are correct?
NO
Set it correctly
YES
Modular cable is connected correctly?
NO
Connect it correctly
YES
When all the ISDN lines are disconnected, picture and sound of the local station are output from the 2B loop back
NO
A-6
YES
When all the ISDN lines are disconnected, picture and sound of the local station are output from the 6B loop back
NO
The system operates normally when the IF-823 board is replaced
NO
A-6
YES
Replace the IF-823 board
YES
When IF-823 board is not used
When line is connected to the port A only, picture and sound of the local station are output from the 2B telecommunication company loop back
NO
A-6
YES
Picture and sound of the local station are output from the 6B loop back
NO
Replace the IF-823 board
YES
When IF-823 board is not used
The remote station is defective

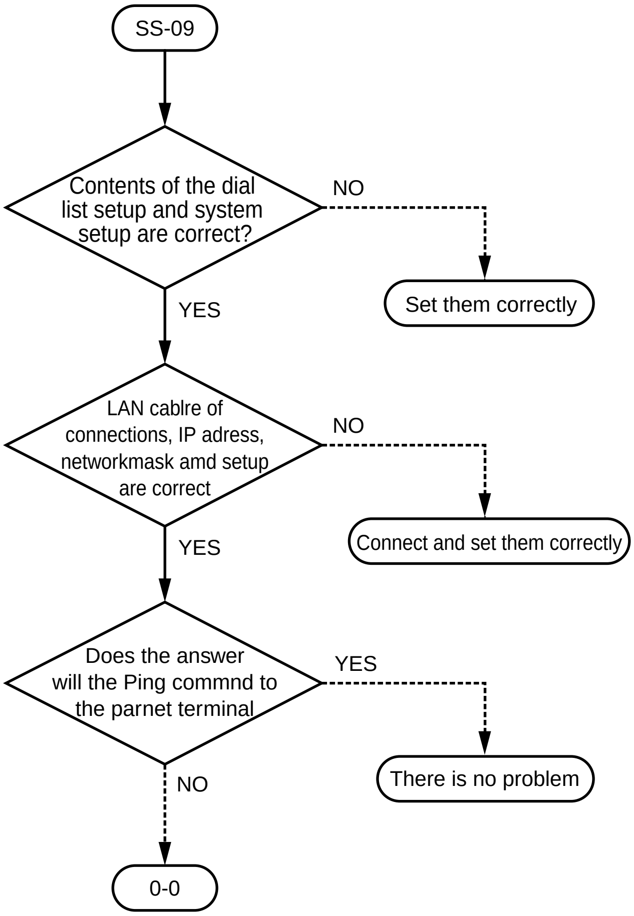
- 2B loop back
  Press the CONNECT/DIS CONNECT button after the system has started up normally, enter "∗∗" to A1 and A2, and dial up.

- 6B loop back
  Press the CONNECT/DIS CONNECT button after the system has started up normally, enter "∗∗" to A1, A2, B1, B2, C1, and C2 and dial up.

- 2B Telecommunication Company loop back
  Press the CONNECT/DIS CONNECT button, and enter the loop back number of Telecommunication Company to A1 and A2, and dial up.

- 6B Telecommunication Company loop back
  Press the CONNECT/DIS CONNECT button, and enter the loop back number of Telecommunication Company to A1, A2, B1, B2, C1, and C2 and dial up.

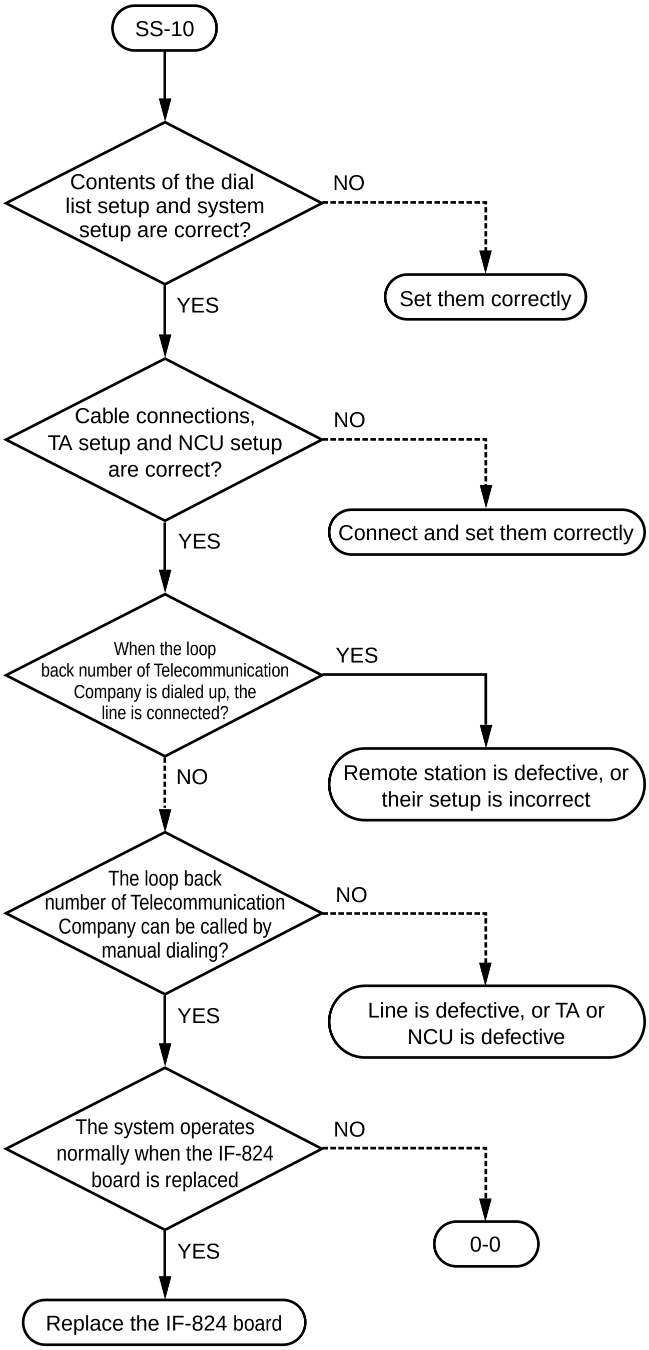
Symptom: Cannot connect to the circuit (LAN).


SS-09
Contents of the dial list setup and system setup are correct?
NO
Set them correctly
YES
LAN cablre of connections, IP adress, networkmask amd setup are correct
NO
Connect and set them correctly
YES
Does the answer will the Ping commnd to the parnet terminal
YES
There is no problem
NO
0-0

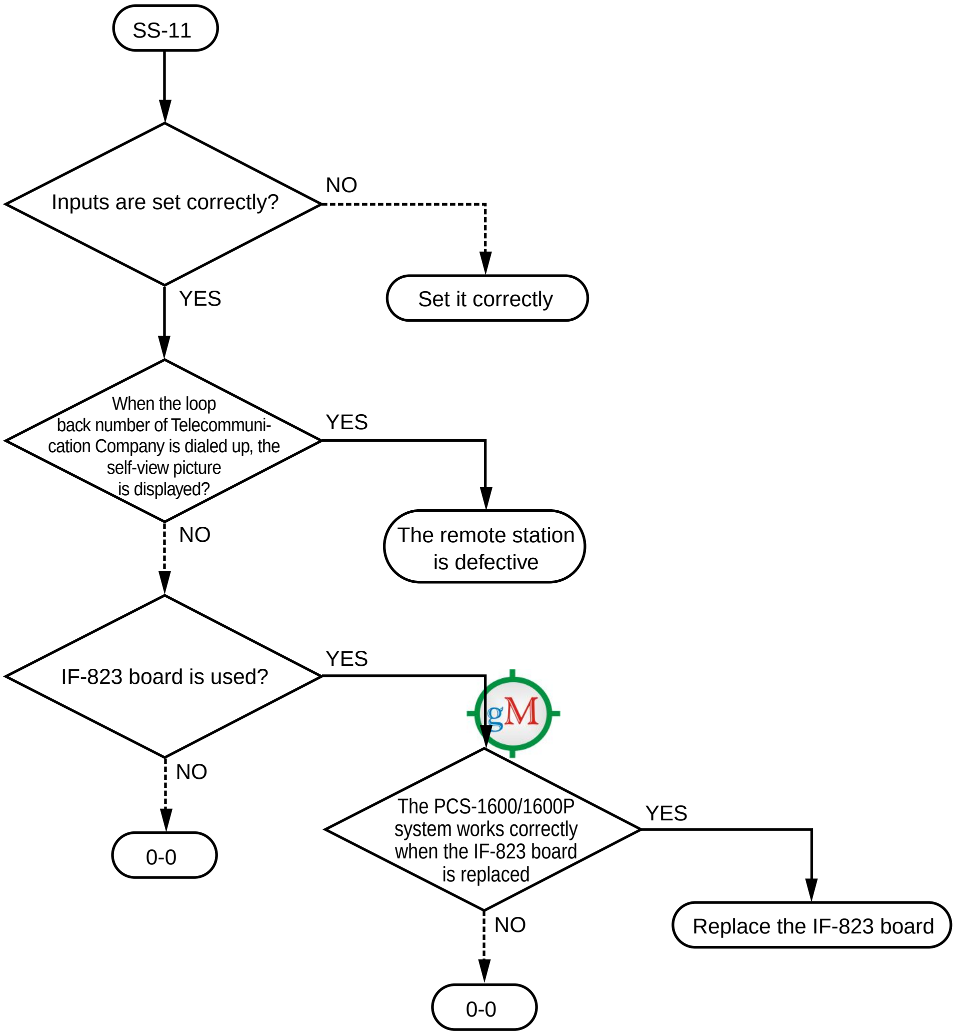
[Ping command oscillation from PCS-1600/1600P]

```
> pass□tcpdb↓
> ping□123.45.67.89↓ (IP adress of remote terminal)
```

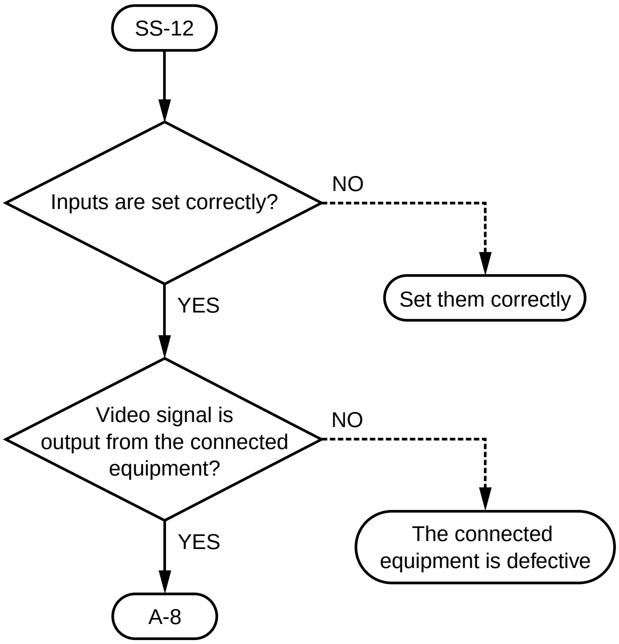
Symptom: Cannot connect to the circuit (V.35).


SS-10
Contents of the dial list setup and system setup are correct?
NO
Set them correctly
YES
Cable connections, TA setup and NCU setup are correct?
NO
Connect and set them correctly
YES
When the loop back number of Telecommunication Company is dialed up, the line is connected?
YES
Remote station is defective, or their setup is incorrect
NO
The loop back number of Telecommunication Company can be called by manual dialing?
NO
Line is defective, or TA or NCU is defective
YES
The system operates normally when the IF-824 board is replaced
NO
0-0
YES
Replace the IF-824 board

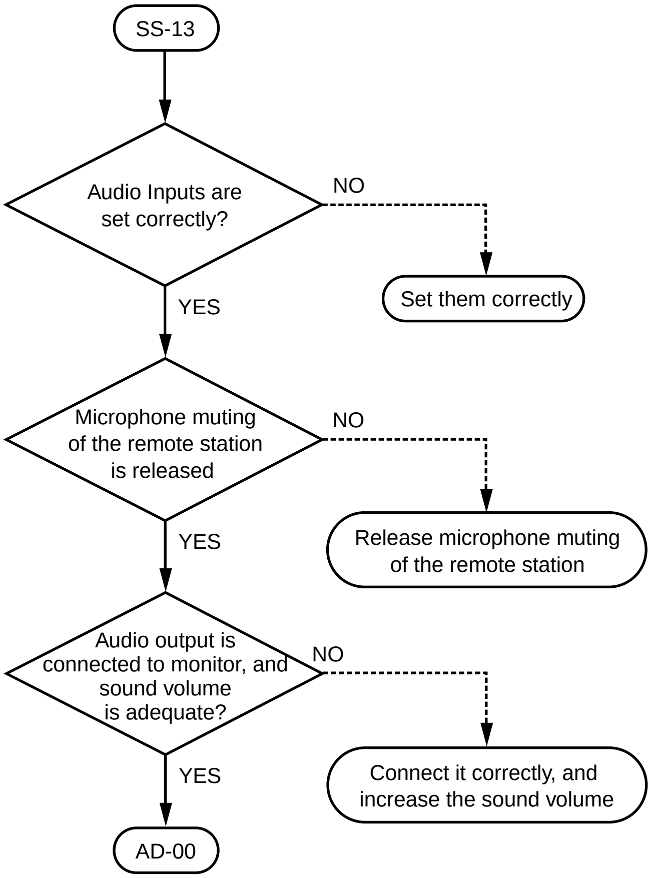
Symptom: After line is connected, picture from a remote side cannot be displayed normally, or picture cannot be sent to a remote side.


SS-11
Inputs are set correctly?
NO
Set it correctly
YES
When the loop back number of Telecommunication Company is dialed up, the self-view picture is displayed?
YES
The remote station is defective
NO
IF-823 board is used?
YES
NO
0-0
The PCS-1600/1600P system works correctly when the IF-823 board is replaced
YES
Replace the IF-823 board
NO
0-0

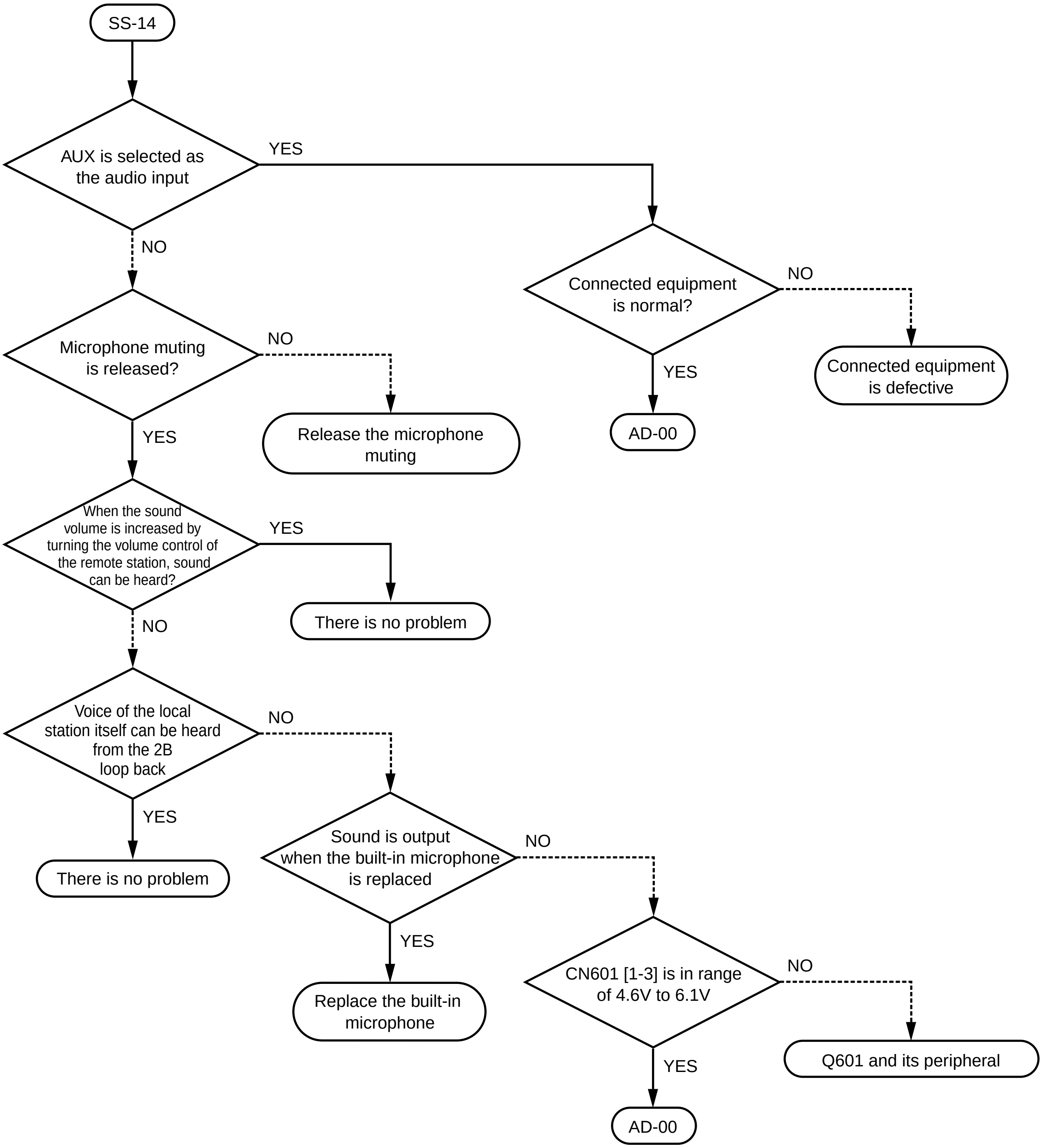
Symptom: Video input (AUX-1, AUX-2, AV-link) picture is not displayed.
However, the camera picture is normally displayed.


SS-12
Inputs are set correctly?
NO
Set them correctly
YES
Video signal is output from the connected equipment?
NO
The connected equipment is defective
YES
A-8

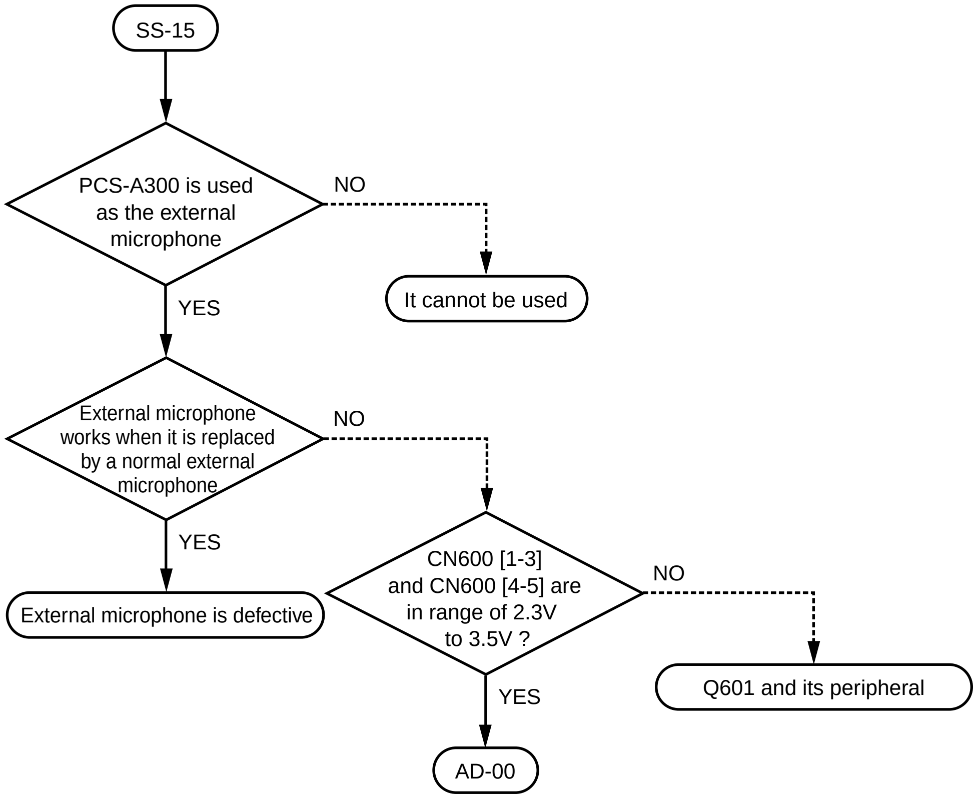
Symptom: After line is connected, any voice cannot be heard from a remote side.


SS-13
Audio Inputs are set correctly?
NO
Set them correctly
YES
Microphone muting of the remote station is released
NO
Release microphone muting of the remote station
YES
Audio output is connected to monitor, and sound volume is adequate?
NO
Connect it correctly, and increase the sound volume
YES
AD-00

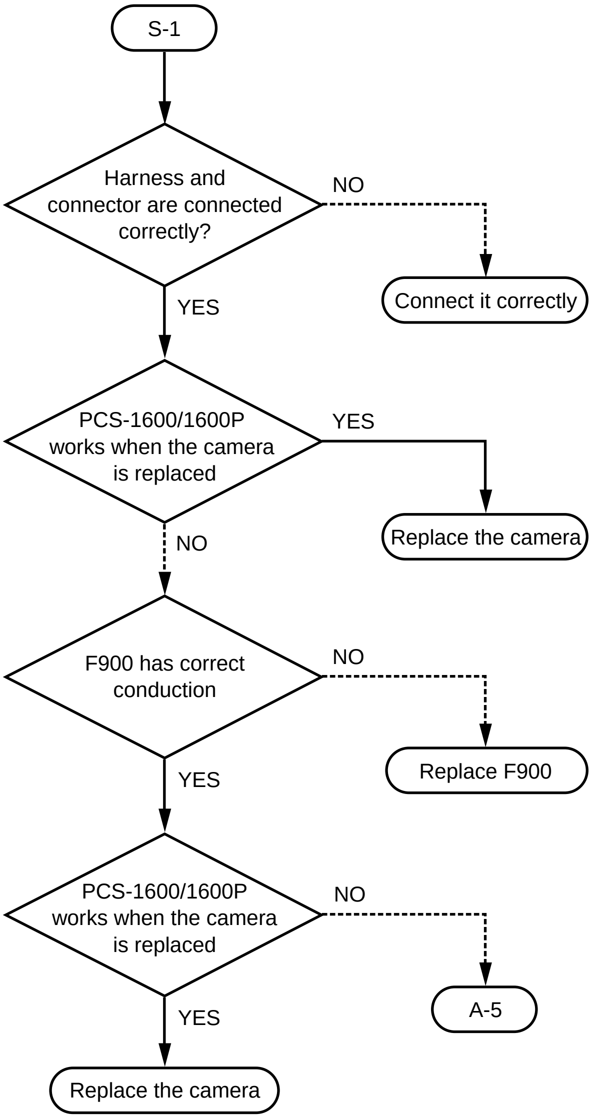
Symptom: After line is connected, any voice cannot be sent to a remote side.


SS-14
AUX is selected as the audio input
YES
NO
Connected equipment is normal?
NO
Connected equipment is defective
YES
AD-00
Microphone muting is released?
NO
Release the microphone muting
YES
When the sound volume is increased by turning the volume control of the remote station, sound can be heard?
YES
There is no problem
NO
Voice of the local station itself can be heard from the 2B loop back
NO
YES
There is no problem
Sound is output when the built-in microphone is replaced
NO
YES
Replace the built-in microphone
CN601 [1-3] is in range of 4.6V to 6.1V
NO
Q601 and its peripheral
YES
AD-00

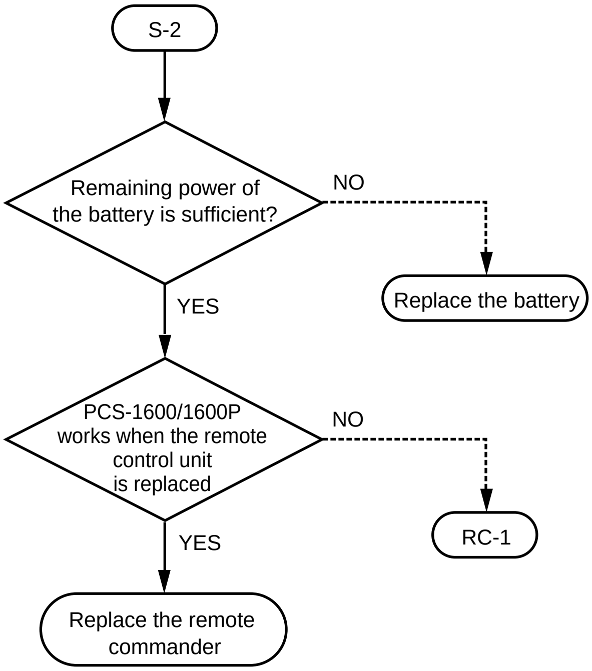
Symptom: External microphone cannot be used.


SS-15
PCS-A300 is used as the external microphone
NO
It cannot be used
YES
External microphone works when it is replaced by a normal external microphone
NO
YES
External microphone is defective
CN600 [1-3] and CN600 [4-5] are in range of 2.3V to 3.5V ?
NO
Q601 and its peripheral
YES
AD-00

Locating the trouble whether it is in the camera or in the PCS-1600/1600P system


S-1
Harness and connector are connected correctly?
NO
Connect it correctly
YES
PCS-1600/1600P works when the camera is replaced
YES
Replace the camera
NO
F900 has correct conduction
NO
Replace F900
YES
PCS-1600/1600P works when the camera is replaced
NO
A-5
YES
Replace the camera

Locating the trouble whether it is in the remote commander or in the PCS-1600/1600P system


S-2
Remaining power of the battery is sufficient?
NO
Replace the battery
YES
PCS-1600/1600P works when the remote control unit is replaced
NO
RC-1
YES
Replace the remote commander

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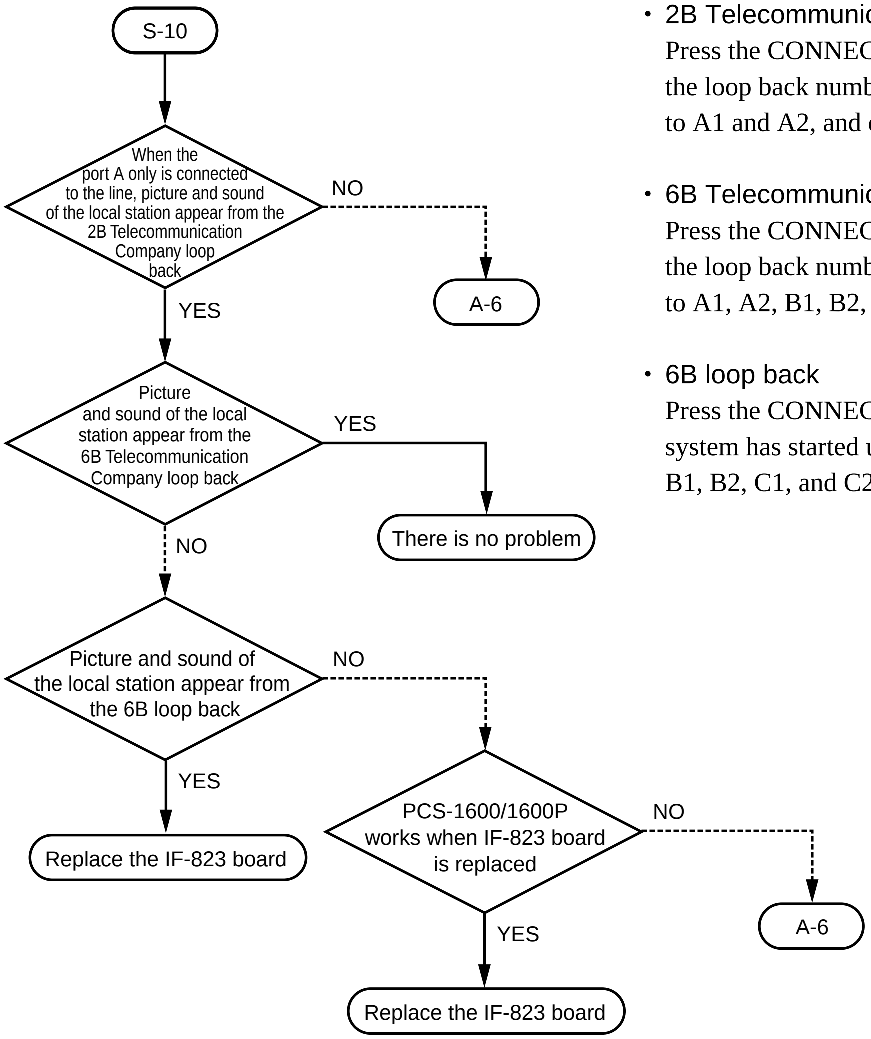
Locating the trouble whether it is in IF-823 board or in the PCS-1600/1600P system

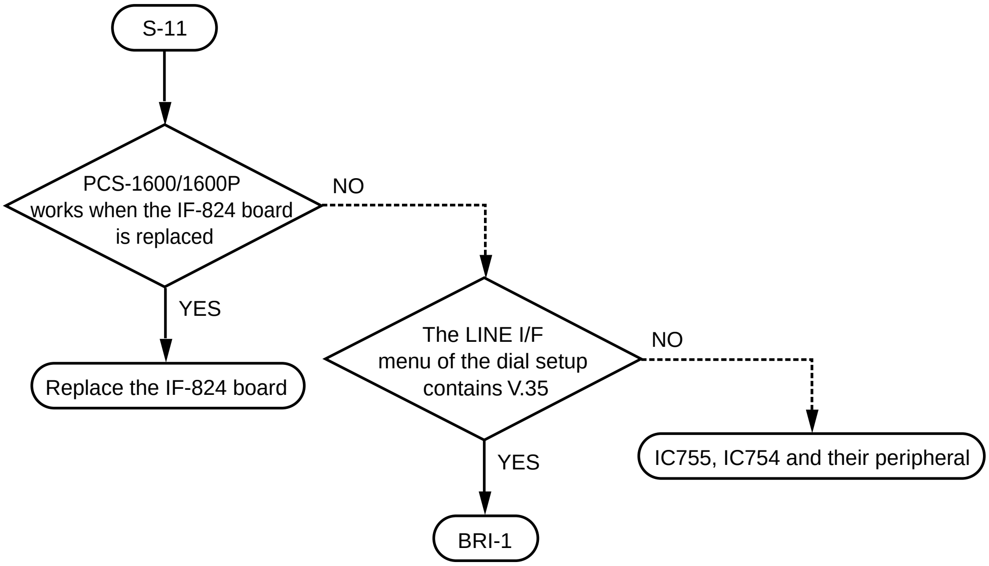

S-10
When the port A only is connected to the line, picture and sound of the local station appear from the 2B Telecommunication Company loop back
NO
A-6
YES
Picture and sound of the local station appear from the 6B Telecommunication Company loop back
YES
There is no problem
NO
Picture and sound of the local station appear from the 6B loop back
NO
YES
Replace the IF-823 board
PCS-1600/1600P works when IF-823 board is replaced
NO
A-6
YES
Replace the IF-823 board

- 2B Telecommunication Company loop back
  Press the CONNECT/DIS CONNECT button, and enter the loop back number of Telecommunication Company to A1 and A2, and dial up.

- 6B Telecommunication Company loop back
  Press the CONNECT/DIS CONNECT button, and enter the loop back number of Telecommunication Company to A1, A2, B1, B2, C1, and C2 and dial up.

- 6B loop back
  Press the CONNECT/DIS CONNECT button after the system has started up normally, enter “**” to A1, A2, B1, B2, C1, and C2 and dial up.

Locating the trouble whether it is in IF-824 board or in the PCS-1600/1600P system


S-11
PCS-1600/1600P works when the IF-824 board is replaced
NO
YES
Replace the IF-824 board
The LINE I/F menu of the dial setup contains V.35
NO
YES
IC755, IC754 and their peripheral
BRI-1

2. When the IPM-92A board or IPM-93A board is suspected to be defective

- However, set the input signal level as shown below before starting to check the circuit boards in order to reduce the external disturbance due to natural light or other adverse effects due to noise, etc. (Select an oscilloscope setup of 20 MHz with band-width limit: [ON.])
- Use the IPM-92A board and IPM-93A board that are known to be good and set the signal level as follows. TP401: 2.5 Vp-p, TP421: 2.5 Vp-p (Incoming light illumination; about 1.1 mW)

Note

When the above described signal level is set, the normal picture cannot be obtained because the output video signal of the DE-55 board is under the excessive input level conditions.

a) Check the modulated video signal (or carrier signal) waveform at TP401 and TP421 on the DE-55 board in order to identify which of the IPM-92A board or IPM-93A board is defective.
   → When TP401 waveform is abnormal; IPM-92A board is defective. When TP421 waveform is abnormal; IPM-93A board is defective.

b) Check DC voltage at CN402 on the DE-55 board, or pin-5 of CN403 to photodiode (ANALOG_27 V) and pin-3 of CN403 (ANALOG_5 V) in order to confirm that the power is correctly supplied.
   → When the power is supplied correctly; pin-5 of CN402 and CN403: 27 ±3 V, pin-3 of CN402 and CN403: 5 ±0.5 V.
   → When the power is found not supplied correctly; refer to the next paragraph "3. When the DE-55 board is suspected to be defective".

c) Check that the 5 V power supply (ANALOG_5 V) and reverse bias to photodiode (ANALOG_27 V) are supplied correctly by measuring the voltage difference between pins-2 and 4 of CN701 or CN801.
   → When they are normal; CN701 or CN801, pin-2: 27 ±3 V, pin-4: 5 ±0.5 V
   → When they have abnormality; Soldering of CN701 or CN801 is suspected to be defective, or flexible flat cable (FFC) has poor connection or is broken.

d) Check the modulated video output signal (or carrier output signal) waveform at D701 on the IPM-92A board or D801 on the IPM-93A board (pin-1 or pin-6) in order to check that the photodiodes are defective or not.
   → When they are normal; FM modulated wave appears (when video signal is input.), or sine wave of 20 mVp-p to 50 mVp-p appears. (when only the carrier signal is input)
   → When they have abnormality; The photodiodes are suspected to be defective or defective soldering is suspected.

e) If any abnormality cannot be found by the above described checks, transistors in the range of Q701 to Q704 (IPM-92A) or Q801 to Q804 (IPM-93A) are suspected to be defective.
   → Make an attempt to replace the transistors and check operation of the system. (Observe waveform at TP401 or TP421 on the DE-55 board.)

3. When the DE-55 board is suspected to be defective

- Select an oscilloscope setup of 20 MHz with band-width limit: OFF.
- Adjust the brightness of the incoming light until 400 mVp-p is obtained at TP401 and TP402.
- The circuit stage up to TP141 must be diagnosed by observing the waveform of the carrier signal and by checking the operating condition with no input signal fed to the infrared transmitter. The circuit stages after that must be diagnosed by observing the demodulated waveform and by checking the operating condition with the color bar signal being input to the infrared transmitter.

a) Check that the DC voltages that are supplied from the power supply to the respective blocks are correct or not.
   → When the DC voltages are normal, the voltages from MA-107/107P board are; TP491: 5 ±0.5 V, TP391: 9 ±0.5 V.
   → When DC voltages are abnormal; Soldering of CN101 is suspected to be defective, or flexible flat cable (FFC) has poor connection or is broken.

b) Check DC voltage at L491 and check the signal flow from TP401 to TP404. [RF amplifier]
   → When the circuit is normal, the waveforms [No. 1 to No. 5] that are shown on page 4-21 can be obtained with no input signal fed to the infrared transmitter.
   → When the circuit is found abnormal; Resoldering the poorly soldered joint in the circuit block of Ref. 400 to Ref. 409. Replace the transistor as needed.

c) Check DC voltage at L492 and check the signal flow from TP421 to TP424. [RF amplifier]
   → When the circuit is normal, the waveforms [No. 1 to No. 5] that are shown on page 4-21 can be obtained with no input signal fed to the infrared transmitter.
   → When the circuit is found abnormal; in the circuit block of Ref. 420 to Ref. 439. Replace the transistor as needed.

d) Check DC voltage at L491. [ANALOG_5.9 V]
   → When the circuit is normal; 5.9 ±0.5 V
   → When the circuit is found abnormal; Resoldering the poorly soldered joint in the circuit block in which abnormality has occurred. Replace the transistor Q901 or others as needed.

e) Check Q110 for correct operation by observing the output waveform at TP101. [BUFFER]
   → When the circuit is normal, the waveform [No. 6] that is shown on page 4-21 can be obtained with no input signal fed to the infrared transmitter.
   → When the circuit is found abnormal; Resoldering the poorly soldered joint in the circuit block in which abnormality has occurred. Replace the transistor Q110 or others as needed.

f) Check IC101 for correct operation by observing the output waveform at TP102. [LIMITTER]
   → When the circuit is normal, the waveform [No. 7] that is shown on page 4-22 can be obtained with no input signal fed to the infrared transmitter.
   → When the circuit is found abnormal; Resoldering the poorly soldered joint in the circuit block in which abnormality has occurred. Replace IC101 or others as needed.

g) Check IC121 for correct operation by observing the output waveform at TP122. [DEMODULATOR]
→ When the circuit is normal, the waveform [No. 8] that is shown on page 4-21 can be obtained with no input signal fed to the infrared transmitter.
→ When the circuit is found abnormal; Resoldering the poorly soldered joint in the circuit block in which abnormality has occurred. Replace IC121 or others as needed.

h) Check DC voltage at L492. [Power supply line of low-pass filter (integrator)]
→ When the circuit is normal; 5.0 ±0.5 V
→ When the circuit is found abnormal; Replace L192.

- When no input signal is fed to the infrared transmitter

i) Check waveform at TP141. [Low-pass filter (integrator)]
→ When the circuit is normal, the waveform [No. 9] that is shown on page 4-22 can be obtained. (no input signal fed to the infrared transmitter)
→ When the circuit is found abnormal; If any output signal is generated while no input signal is fed to the infrared transmitter, it is considered abnormal because the carrier signal without any input generates no output signal after it is demodulated.

* However, when an infrared transmitter is not operating (in such cases that the main power of the infrared transmitter is not turned on), some output signals are generated because the system noise or external disturbances due to natural light is amplified by the limiter.

- When color bar signal is input to the infrared transmitter

j) Check the output waveform at TP141. [Low-pass filter (integrator)]
→ When the circuit is normal, the waveform [No. 10] that is shown on page 4-22 can be obtained.
→ When the above waveform cannot be obtained, the circuit is suspected to be abnormal; Resoldering the poorly soldered joint in the circuit block in which abnormality has occurred. Replace Q140 or others as needed.

k) Check IC141 (1/2) for its correct operation by observing the output waveform on TP142. [DE-EMPHASIS]
→ When the circuit is normal, the waveform [No. 11] that is shown on page 4-22 can be obtained.
→ When the above waveform cannot be obtained, the circuit is suspected to be abnormal; Resoldering the poorly soldered joint at R148, R149, C147 and C148. Replace IC141 or others as needed.

l) Check IC142 for its correct operation by observing the output waveform at TP143. (Video signal check) [VIDEO AMP]
→ When the circuit is normal, the waveform [No. 12] that is shown on page 4-22 can be obtained.
→ When the above waveform cannot be obtained, the circuit is suspected to be abnormal; Resoldering the poorly soldered joint of resistors and capacitors in the peripheral of IC142. Replace IC142 or others as needed.

m) Check the muting function by observing the output waveform at TP143. [MUTE CONTROL]

→ When the muting function works normally, no output is produced because the mute function works when operation of the infrared transmitter is stopped or incoming infrared light is completely intercepted before reaching the receptor.

→ When any output signal is produced under the above described condition or when the video signal is not output even though the infrared transmitter modulates and transmits the video signal, the circuit is suspected to be abnormal.
Resoldering the poorly soldered joint of the components having reference number 160 series.
Or replace D161, Q161 to Q164 one after another and find out the location of error by confirming the waveform.

＊ The composite horizontal and vertical sync signal is separated from the video signal at the circuit before the D161 anode. The sync signal is rectified at the D161 cathode, then video signal detection is performed at Q163 and Q902. When the video signal is not detected, mute control is driven at the input circuit of the final video amplifier stage. Therefore, mute control can be judged if it works correctly or not by checking the Q164 base potential.

4. When RX-47A is suspected to be defective

a) If any signal cannot be check at IC451 pin-1 while receiving the incoming SIRCS signal.
→ Replace IC451.

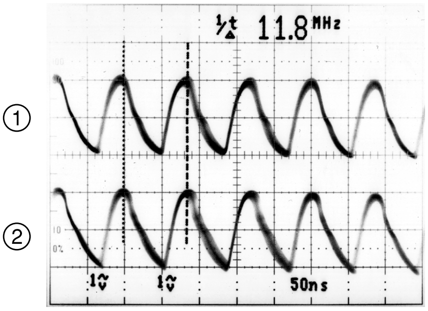
b) If SIRCS signal cannot be checked at TP451 even the above step a is confirmed.
→ Replace IC452.

c) If SIRCS signal cannot be checked at MA-107/107P side.
→ Poor soldering of CN404. Replace CN404 or others as needed.

No. 1

① **TP401** ② **TP421**

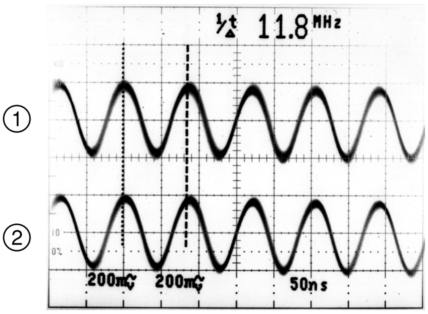
∗ HSA-IF1, distance 50 cm
Input signal : None



No. 2

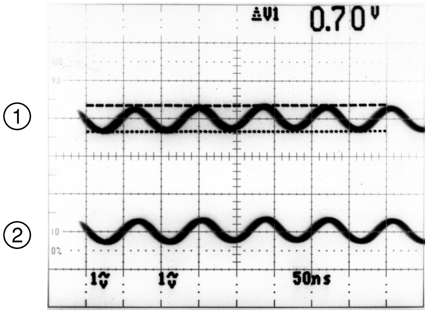
① **TP401** ② **TP421**

∗ HSA-IF1
Adjust the transmitting angle of the transmitter until the angular amplitude becomes 400 mVp-p.



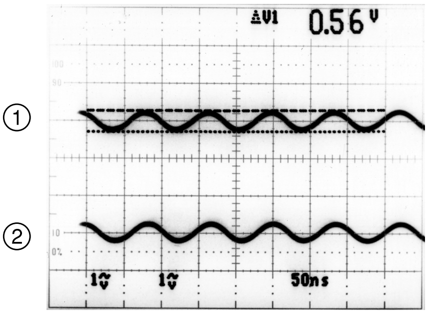
No. 3

① **TP402** ② **TP422**



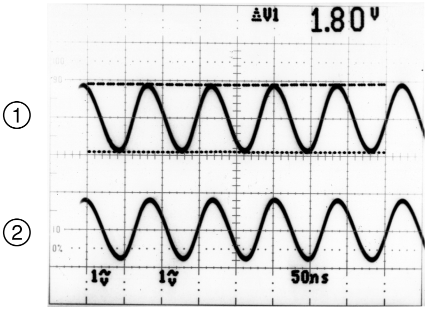
No. 4

① **TP403** ② **TP423**



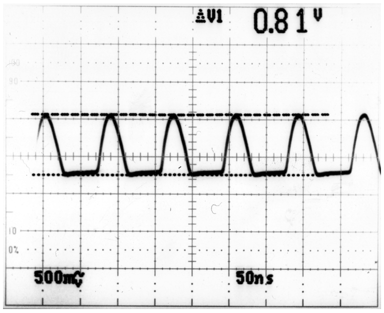
No. 5

① **TP404** ② **TP424**



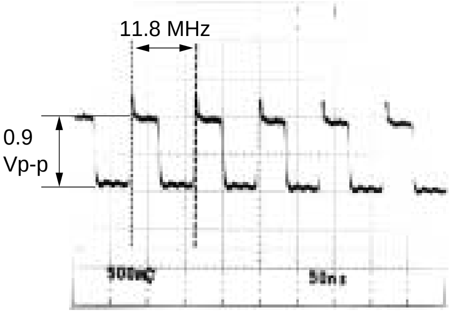
No. 6

TP101



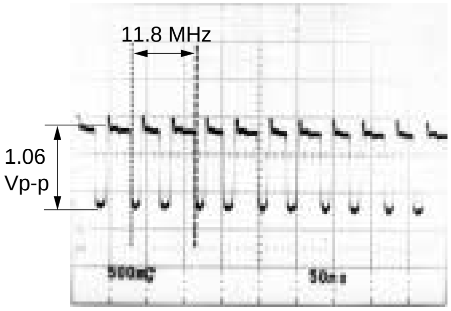
No. 7

TP102



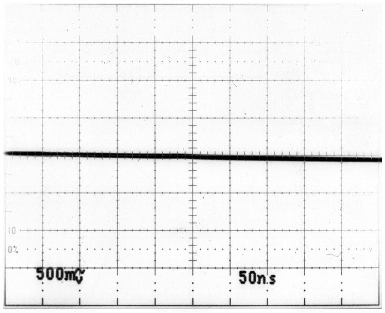
No. 8

TP121



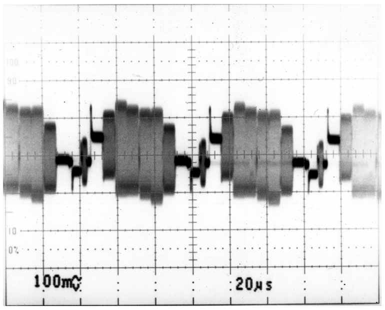
No. 9

TP141



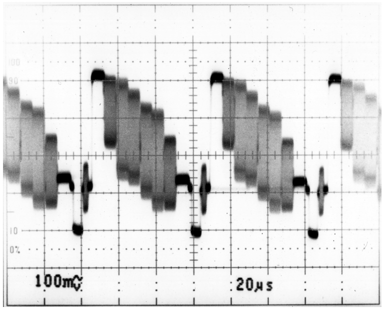
No. 10

TP141



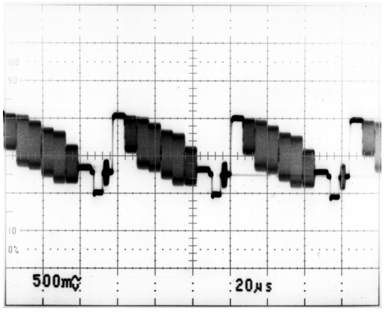
No. 11

TP142



No. 12

TP143



4-2. Self-diagnostics Function

4-2-1. About Self-diagnostics Function

Confirm the symptoms and their corresponding errors using Sections “4-1. Check Items Before Starting Self-diagnostics” and “4-2-1. About Self-diagnostics Function”. Confirming the symptoms and their corresponding errors as described above indicates whether the error is caused by operation error of users or whether repairing the circuit board of the PCS-1600/1600P is necessary or not. When the cause of error can be located by replacing the circuit boards or options, replace the parts/components and check operation following the self-diagnostics flow charts. When repairing a circuit board becomes necessary, activate the self-diagnostics and perform repairing. Start with the (0-0) step of the self-diagnostics flow charts. Problems are found during the course of self-diagnostics. If cause of error cannot be identified by the self-diagnostics flow charts, perform “4-2-2. Diagnostics on Each Block” of the block that is suspected to be defective from the trouble symptoms.
When repair is completed, perform the operation check in accordance with the following notes.

- Because there can be cases that the built-in flash memories are cleared, it is recommended to install the newest software before starting repair work.

- The reference numbers and pin numbers are indicated as Ref. No. [pin No.].
  Voltage between pins is indicated as Ref. No. [pin No. - pin No.].

- Set the communication conditions of the terminal that is connected to the DIAG port as follows. Use a sex-inverted cable for connecting the communication terminal.
  Communication speed : 38400 bps
  Data Length : 8 bits
  Start bit : 1 bit
  Stop bit : 1 bit
  Parity : None
  Flow control : Xon/Xoff

- The diagnostics mode can be started up from the terminal that is connected to the DIAG port by turning on the main power while pressing the [CTRL] + D keys.
  When flow chart or description has the following expression:
  #diag□auto↓
  It indicates entry into the prompt line in the diagnostics mode.
  At the same time, □ indicates pressing a space key and ↓ indicates pressing the ENTER key.

- When flow chart or description has the following expression:
  >mail□12,3456790↓
  It indicates entry into the prompt line in the application.
  At the same time, □ indicates pressing a space key and ↓ indicates pressing the ENTER key.

Notes

- When repairing is completed, be sure to start with the step (0-0) and confirm that the PCS-1600/1600P passes all the diagnostics items.
  Then connect the PCS-1600/1600P to the loop back line of a Telecommunication Company and confirm that your pictures and sound are being outputted.
- When the instructions such as the 2B, 6B connection or loop back instruction in the middle of a flow chart, confirm that the actual communication is 2B, 6B using the communication status indication after completion of connection or loop back.
- When replacing the Flash Memory (IC103 and IC104), perform the following setting.
  In addition, when replacing the Flash Memory, make sure replace them both at a time.

(1) Destination setting

Before starting any checks, it is required to perform the destination setting below.
If following entry is not performed, it is impossible to make any checks.

1) For NTSC setting, enter the #writeDestination□NTSC↓.
2) For PAL setting, enter the #writeDestination□PAL↓.

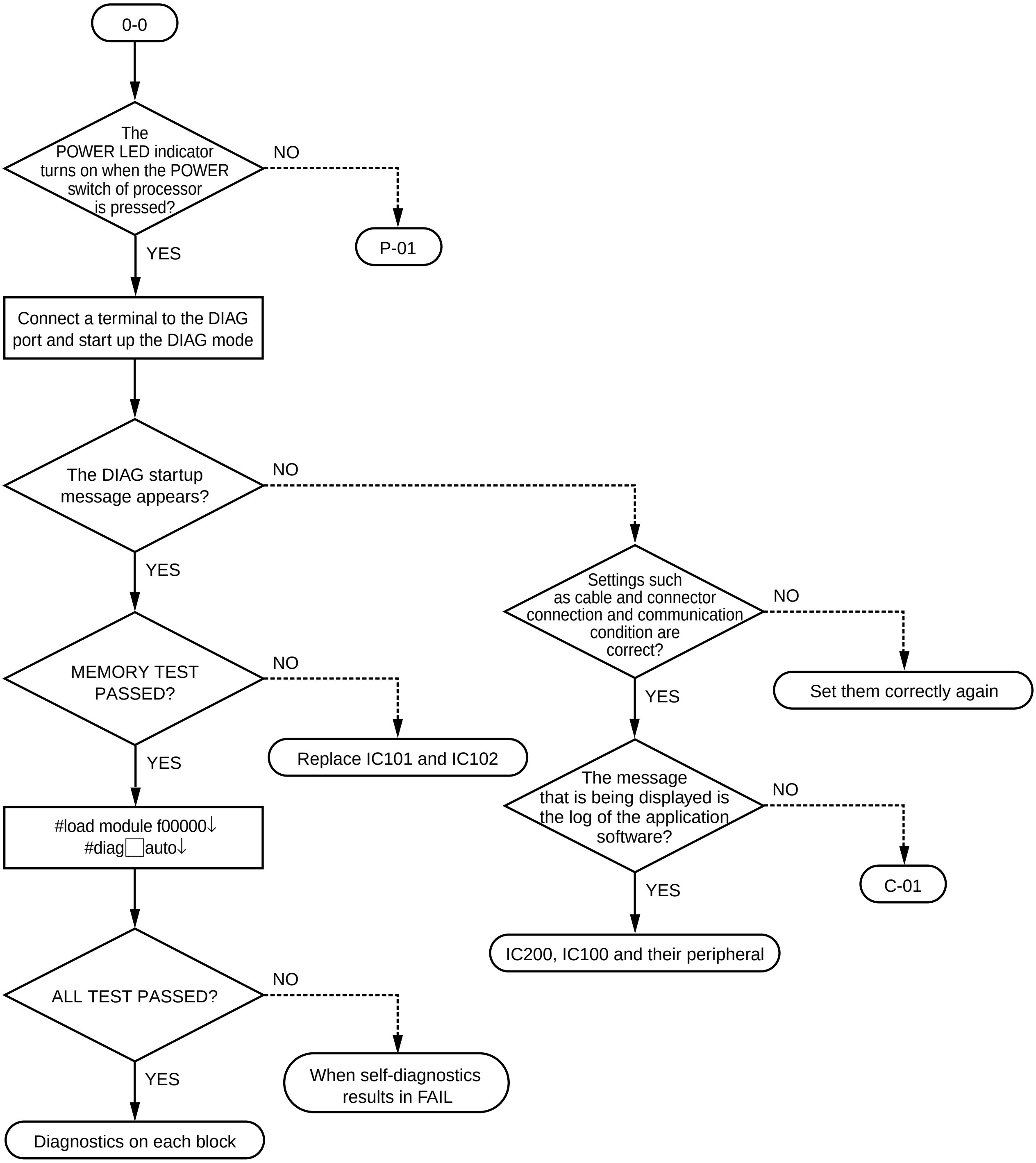
(2) Setting the checks finished flag

After all checks are passed, enter the #write DiagStatus□PASSED↓.
If above entry is not performed, it is impossible to start up the application software.

(3) Installing the application software

After application software is installed, perform the confirmation of operation.
(When install it to the unit, it is required to setting that corresponding to the options. For more detail, refer to the technical memorandum.)

✻ Besides, it is required to perform the setting of MAC address. It is also required to setting of the serial number in case that installing the board to the unit. For these setting, refer to the technical memorandum or consult your nearest Sony Service Center.)


0-0
The POWER LED indicator turns on when the POWER switch of processor is pressed?
NO
P-01
YES
Connect a terminal to the DIAG port and start up the DIAG mode
The DIAG startup message appears?
NO
Settings such as cable and connector connection and communication condition are correct?
NO
Set them correctly again
YES
The message that is being displayed is the log of the application software?
NO
C-01
YES
IC200, IC100 and their peripheral
YES
MEMORY TEST PASSED?
NO
Replace IC101 and IC102
YES
#load module f00000↓
#diag☐auto↓
ALL TEST PASSED?
NO
When self-diagnostics results in FAIL
YES
Diagnostics on each block

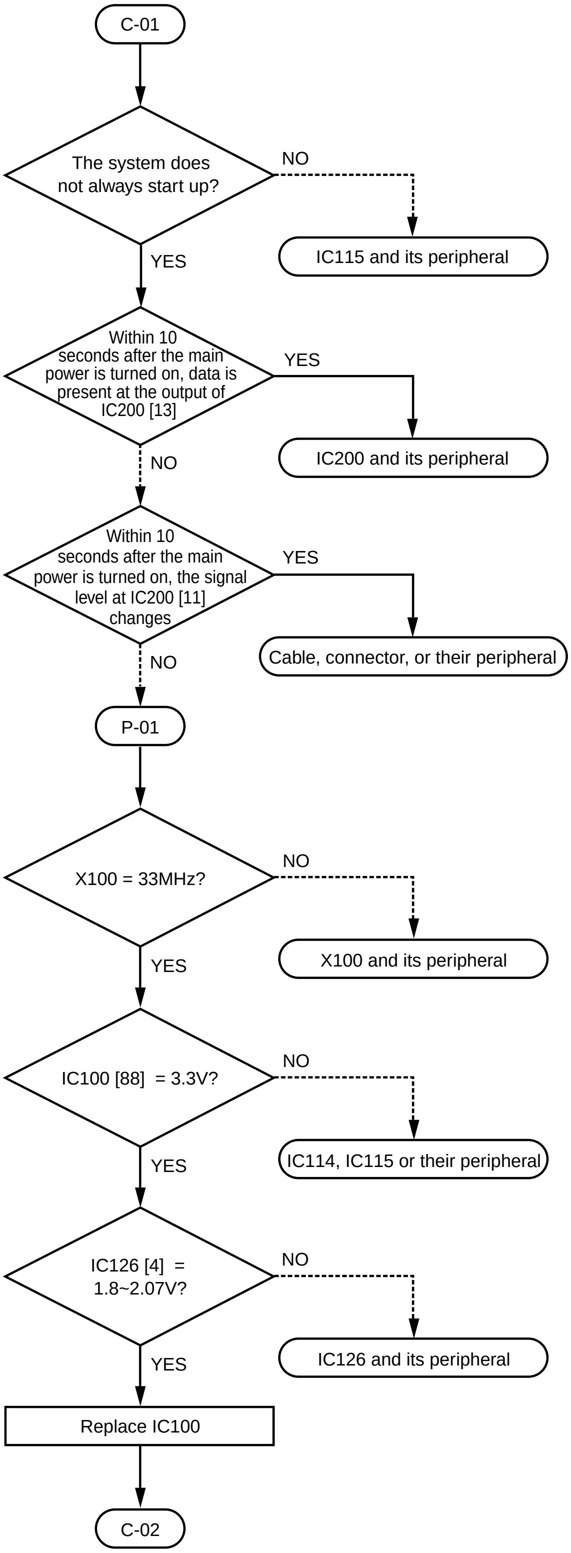
Notes

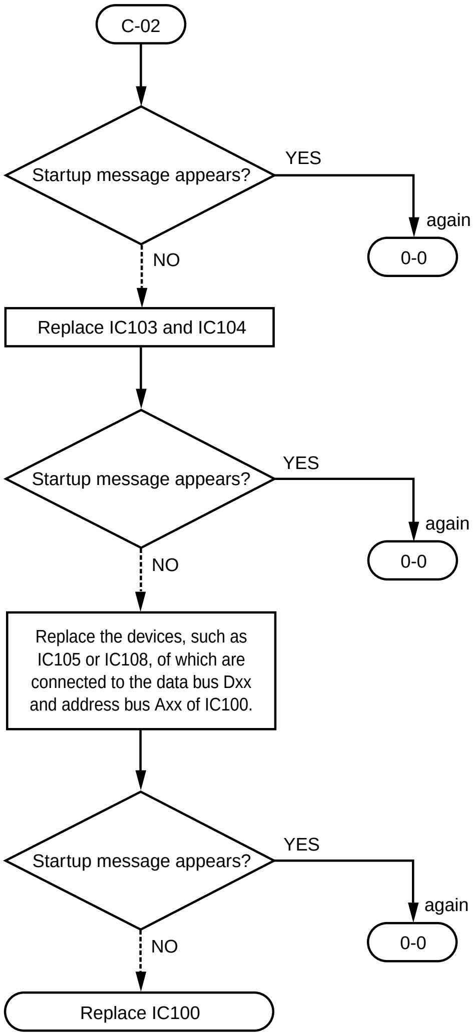
When replacing the Flash Memory (IC103 and IC104), it is required to perform the following setting.

(1) Destination setting (NTSC/PAL)

(2) Setting the checks finished flag

(3) Installing the application software (For more detail, refer to Sec.4-23.)


C-01
The system does not always start up?
NO
IC115 and its peripheral
YES
Within 10 seconds after the main power is turned on, data is present at the output of IC200 [13]
YES
IC200 and its peripheral
NO
Within 10 seconds after the main power is turned on, the signal level at IC200 [11] changes
YES
Cable, connector, or their peripheral
NO
P-01
X100 = 33MHz?
NO
X100 and its peripheral
YES
IC100 [88] = 3.3V?
NO
IC114, IC115 or their peripheral
YES
IC126 [4] = 1.8~2.07V?
NO
IC126 and its peripheral
YES
Replace IC100
C-02


C-02
Startup message appears?
YES
again
0-0
NO
Replace IC103 and IC104
Startup message appears?
YES
again
0-0
NO
Replace the devices, such as IC105 or IC108, of which are connected to the data bus Dxx and address bus Axx of IC100.
Startup message appears?
YES
again
0-0
NO
Replace IC100

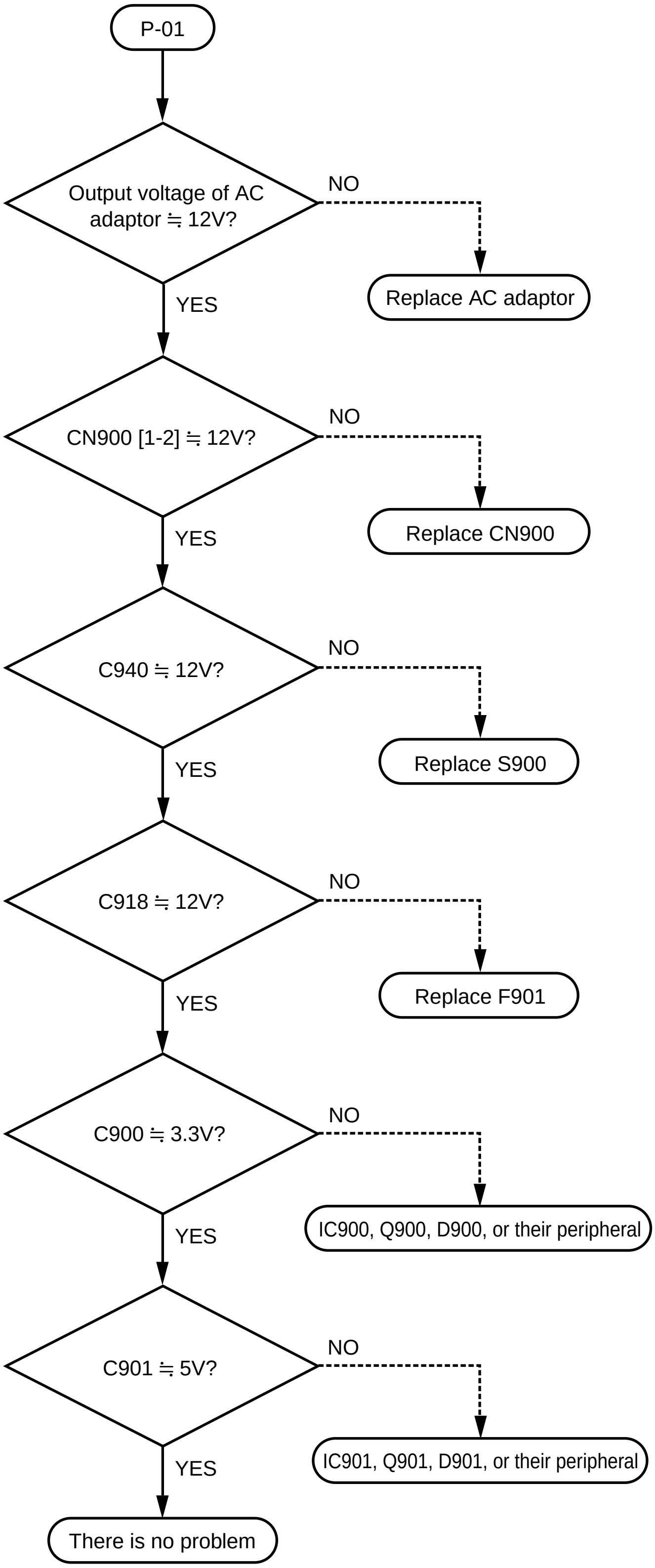
Notes

When flash memory (IC103, IC104) is replaced, be sure to input the following command:

#diag☐Completion Mark↓

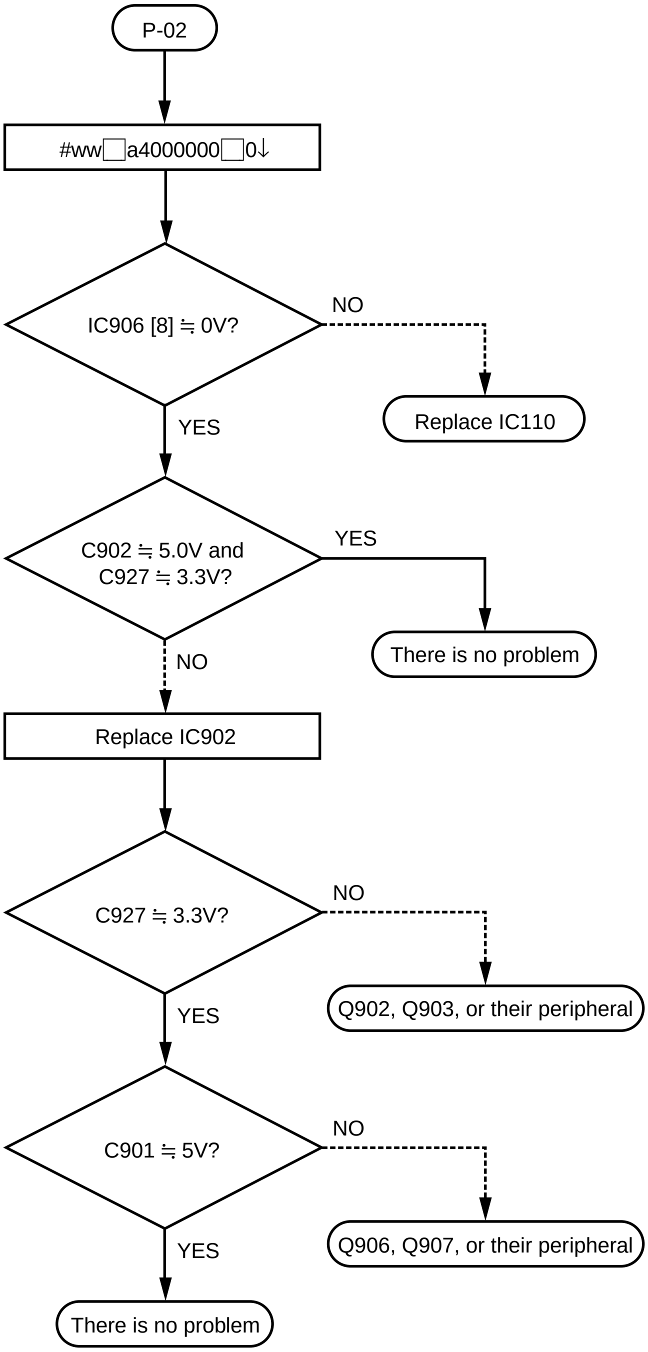
If the command is not input, application software cannot be started up.

Abter the command is inputted, it is requined that inserting the memory cord of the appeication and downloading the software


P-01
Output voltage of AC adaptor ≒ 12V?
NO
Replace AC adaptor
YES
CN900 [1-2] ≒ 12V?
NO
Replace CN900
YES
C940 ≒ 12V?
NO
Replace S900
YES
C918 ≒ 12V?
NO
Replace F901
YES
C900 ≒ 3.3V?
NO
IC900, Q900, D900, or their peripheral
YES
C901 ≒ 5V?
NO
IC901, Q901, D901, or their peripheral
YES
There is no problem

Note

When you have entered from other diagnostics flow chart to this flow chart P-01, and when you have ended the flow chart P-01 with the result “ There is no problem”, return to the original flow chart and continue its diagnosing.

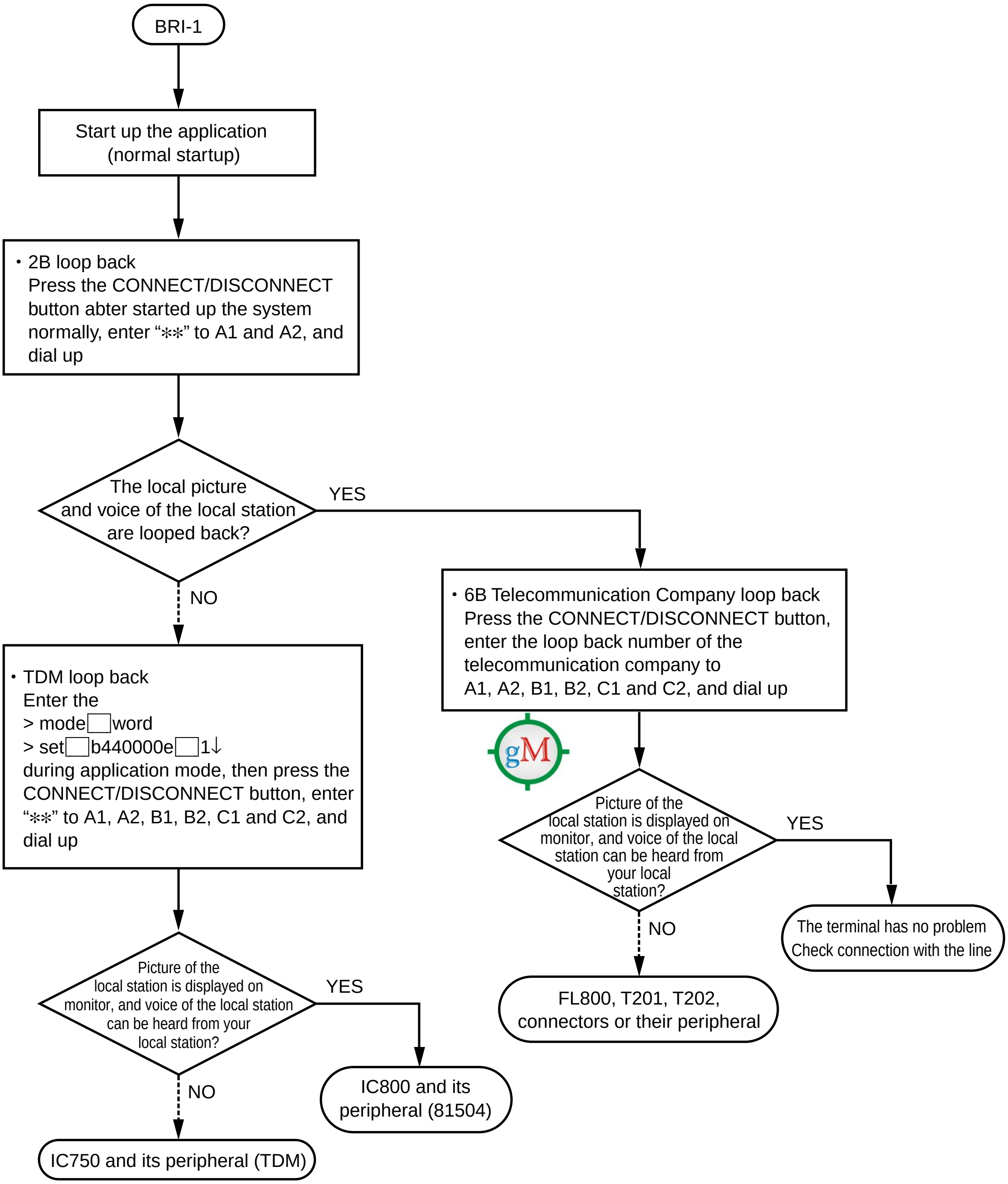

P-02
#ww□a4000000□0↓
IC906 [8] ≒ 0V?
NO
Replace IC110
YES
C902 ≒ 5.0V and C927 ≒ 3.3V?
YES
There is no problem
NO
Replace IC902
C927 ≒ 3.3V?
NO
Q902, Q903, or their peripheral
YES
C901 ≒ 5V?
NO
Q906, Q907, or their peripheral
YES
There is no problem

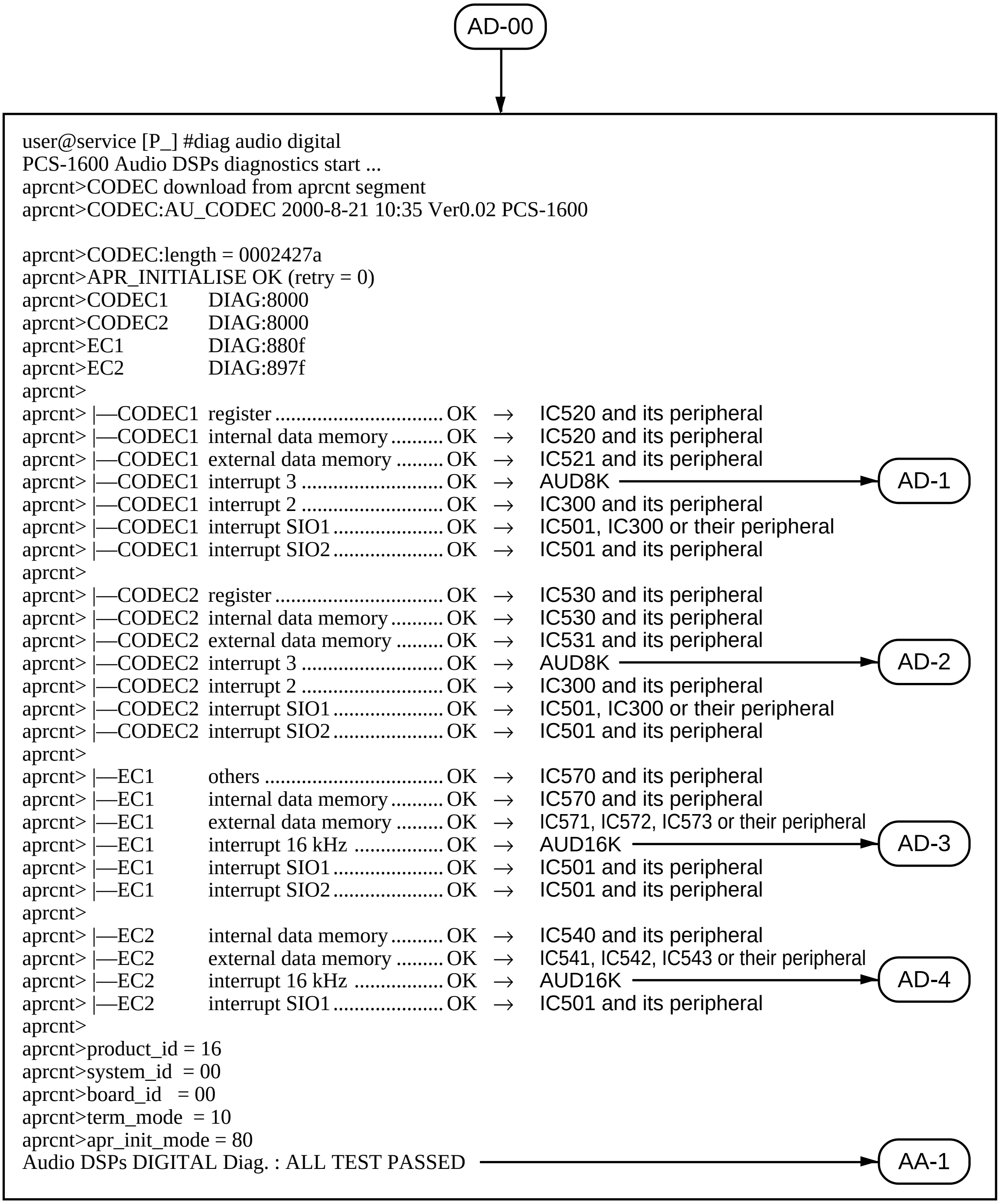
Note

When you have entered from other diagnostics flow chart to this flow chart P-01, and when you have ended the flow chart P-01 with the result “ There is no problem”, return to the original flow chart and continue its diagnosing.

4-2-2. Diagnostics on Each Block

- BRI (when the line is unable to connect) BRI-1
- Audio AD-00
- IF-823 board IF823-1
- IF-824 board IF824
- SIRCS (transmitter block) IR-1
- SIRCS (receiver block) RC-1
- PCMCIA MC-1
- USER DATA PORT UD-1


BRI-1
Start up the application (normal startup)
• 2B loop back
Press the CONNECT/DISCONNECT button abter started up the system normally, enter "⁎⁎" to A1 and A2, and dial up
The local picture and voice of the local station are looped back?
YES
NO
• TDM loop back
Enter the
> mode□word
> set□b440000e□1↓
during application mode, then press the CONNECT/DISCONNECT button, enter "⁎⁎" to A1, A2, B1, B2, C1 and C2, and dial up
Picture of the local station is displayed on monitor, and voice of the local station can be heard from your local station?
YES
IC800 and its peripheral (81504)
NO
IC750 and its peripheral (TDM)
• 6B Telecommunication Company loop back
Press the CONNECT/DISCONNECT button, enter the loop back number of the telecommunication company to A1, A2, B1, B2, C1 and C2, and dial up
Picture of the local station is displayed on monitor, and voice of the local station can be heard from your local station?
YES
The terminal has no problem
Check connection with the line
NO
FL800, T201, T202, connectors or their peripheral



```
user@service [P_] #diag audio digital
PCS-1600 Audio DSPs diagnostics start ...
aprcnt>CODEC download from aprcnt segment
aprcnt>CODEC:AU_CODEC 2000-8-21 10:35 Ver0.02 PCS-1600

aprcnt>CODEC:length = 0002427a
aprcnt>APR_INITIALISE OK (retry = 0)
aprcnt>CODEC1      DIAG:8000
aprcnt>CODEC2      DIAG:8000
aprcnt>EC1         DIAG:880f
aprcnt>EC2         DIAG:897f
aprcnt>
aprcnt> |—CODEC1  register ............................... OK  →  IC520 and its peripheral
aprcnt> |—CODEC1  internal data memory .......... OK  →  IC520 and its peripheral
aprcnt> |—CODEC1  external data memory ......... OK  →  IC521 and its peripheral
aprcnt> |—CODEC1  interrupt 3 .......................... OK  →  AUD8K
aprcnt> |—CODEC1  interrupt 2 .......................... OK  →  IC300 and its peripheral
aprcnt> |—CODEC1  interrupt SIO1 .................... OK  →  IC501, IC300 or their peripheral
aprcnt> |—CODEC1  interrupt SIO2 .................... OK  →  IC501 and its peripheral
aprcnt>
aprcnt> |—CODEC2  register ............................... OK  →  IC530 and its peripheral
aprcnt> |—CODEC2  internal data memory .......... OK  →  IC530 and its peripheral
aprcnt> |—CODEC2  external data memory ......... OK  →  IC531 and its peripheral
aprcnt> |—CODEC2  interrupt 3 .......................... OK  →  AUD8K
aprcnt> |—CODEC2  interrupt 2 .......................... OK  →  IC300 and its peripheral
aprcnt> |—CODEC2  interrupt SIO1 .................... OK  →  IC501, IC300 or their peripheral
aprcnt> |—CODEC2  interrupt SIO2 .................... OK  →  IC501 and its peripheral
aprcnt>
aprcnt> |—EC1      others ................................. OK  →  IC570 and its peripheral
aprcnt> |—EC1      internal data memory .......... OK  →  IC570 and its peripheral
aprcnt> |—EC1      external data memory ......... OK  →  IC571, IC572, IC573 or their peripheral
aprcnt> |—EC1      interrupt 16 kHz ................ OK  →  AUD16K
aprcnt> |—EC1      interrupt SIO1 .................... OK  →  IC501 and its peripheral
aprcnt> |—EC1      interrupt SIO2 .................... OK  →  IC501 and its peripheral
aprcnt>
aprcnt> |—EC2      internal data memory .......... OK  →  IC540 and its peripheral
aprcnt> |—EC2      external data memory ......... OK  →  IC541, IC542, IC543 or their peripheral
aprcnt> |—EC2      interrupt 16 kHz ................ OK  →  AUD16K
aprcnt> |—EC2      interrupt SIO1 .................... OK  →  IC501 and its peripheral
aprcnt>
aprcnt>product_id = 16
aprcnt>system_id  = 00
aprcnt>board_id   = 00
aprcnt>term_mode  = 10
aprcnt>apr_init_mode = 80
Audio DSPs DIGITAL Diag. : ALL TEST PASSED
```

Notes

When you want to diagnose the audio DSP, perform the video block diagnosis as shown below before starting diagnosing the audio DSP.

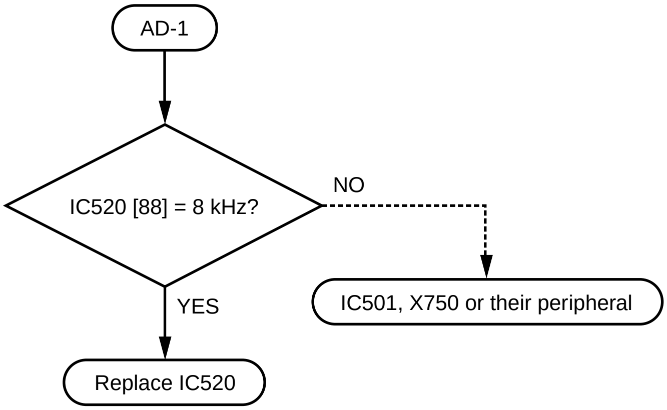
#diag☐video↓

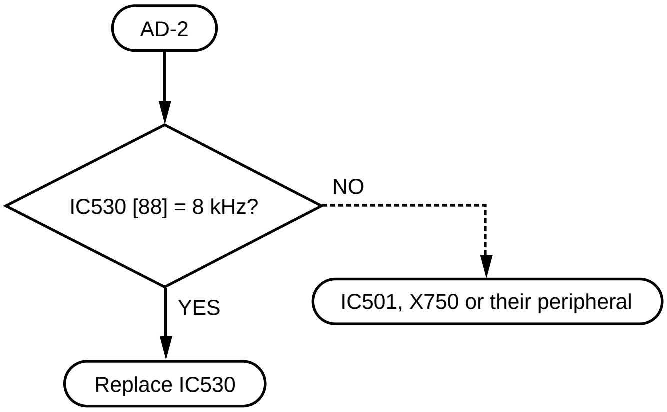
Immediately after entering it, check digital circuit of the DSPs as shown below.

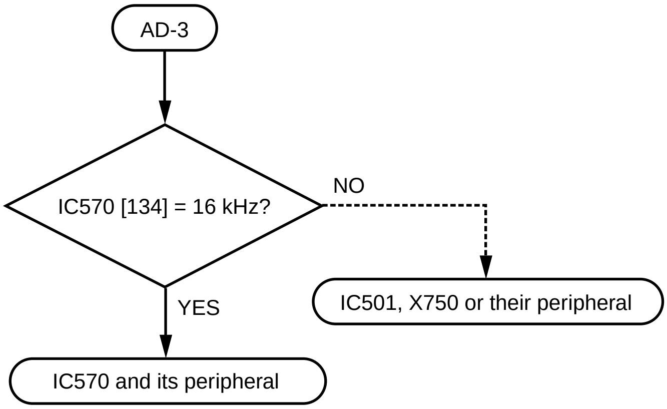
#diag☐audio☐digital↓

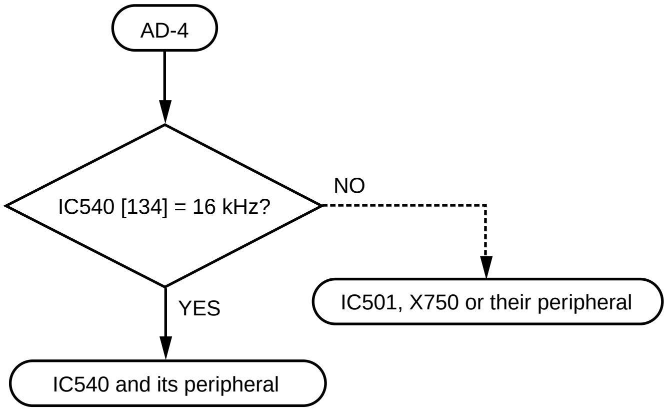
Then perform the analog block (AA-1, AA-2, AA-3) check.

When you want to diagnose the analog circuit of the audio block, the digital block of the audio block must have been completed in advance. Even when the video/audio digital tests have already been completed, correct result cannot be obtained if any commands that affect operations of the system including video circuit and power supply for audio DSP. Perform this command continuously.


AD-1
IC520 [88] = 8 kHz?
NO
IC501, X750 or their peripheral
YES
Replace IC520

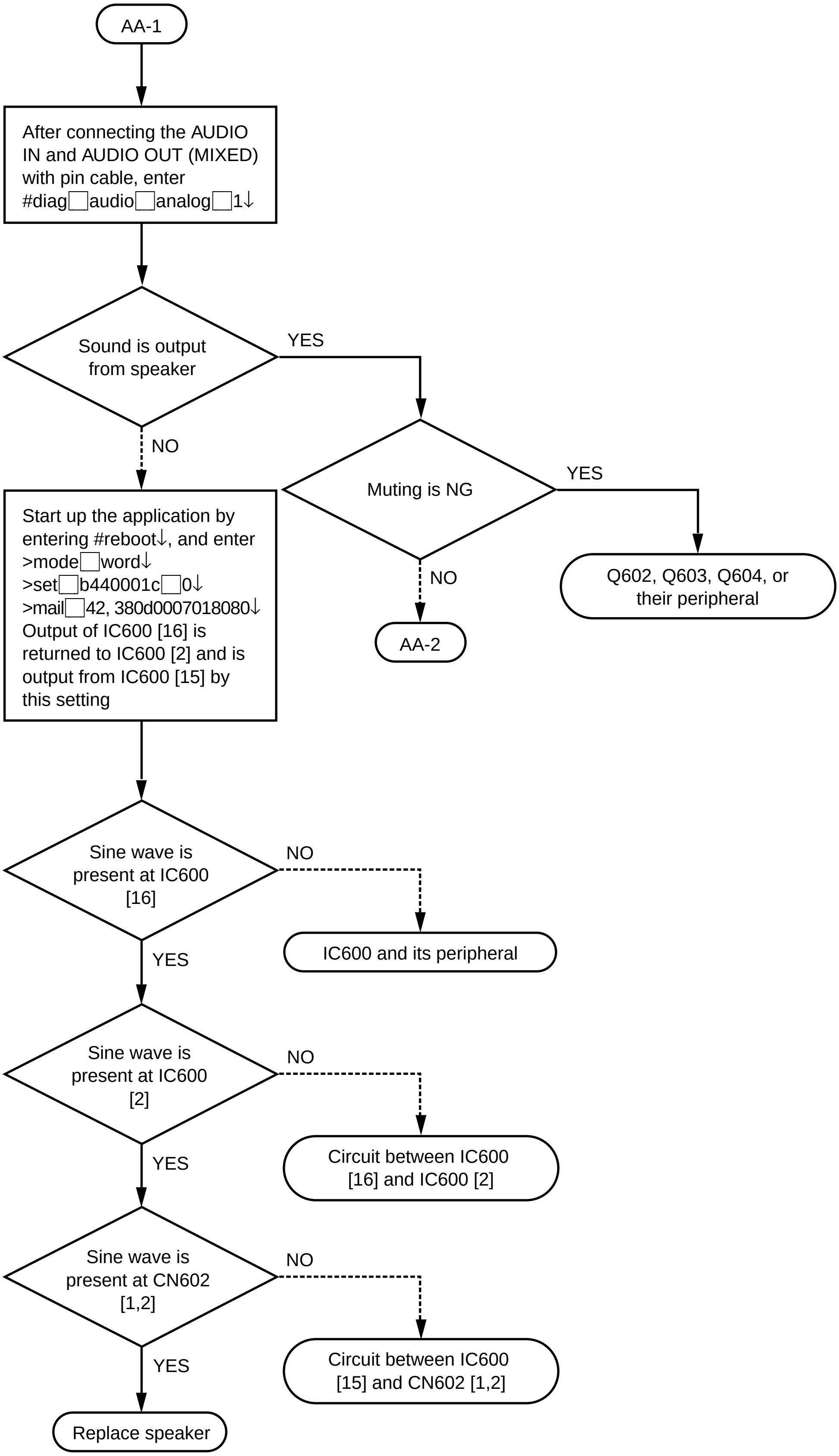

AD-2
IC530 [88] = 8 kHz?
NO
IC501, X750 or their peripheral
YES
Replace IC530


AD-3
IC570 [134] = 16 kHz?
NO
IC501, X750 or their peripheral
YES
IC570 and its peripheral


AD-4
IC540 [134] = 16 kHz?
NO
IC501, X750 or their peripheral
YES
IC540 and its peripheral

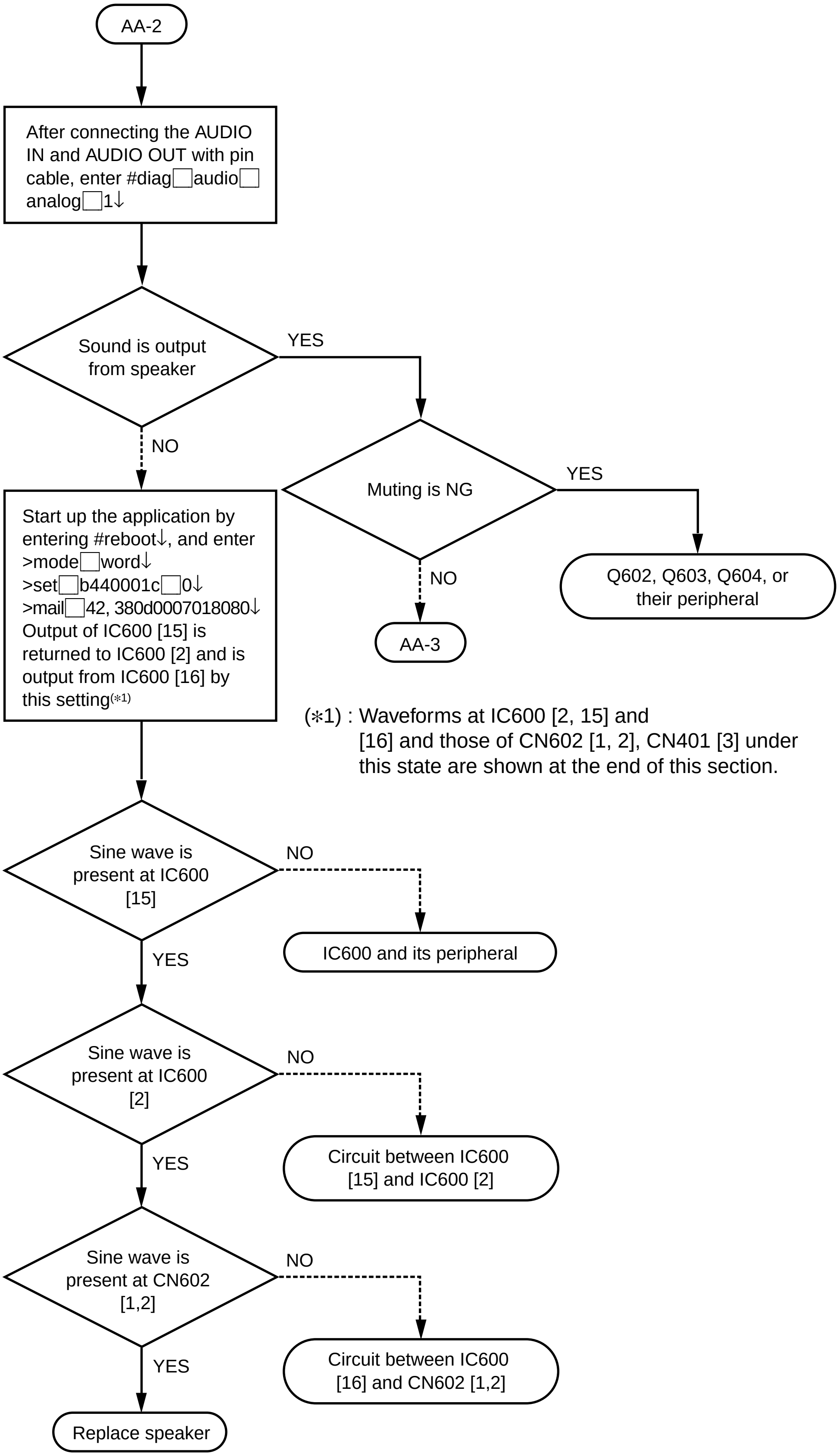
Note

When sound is not output although this check is OK, the audio serial bus controller (IC501), the PLL (IC500) of the audio block and its peripheral may have a trouble.


AA-1
After connecting the AUDIO IN and AUDIO OUT (MIXED) with pin cable, enter #diag□audio□analog□1↓
Sound is output from speaker
YES
NO
Muting is NG
YES
NO
Q602, Q603, Q604, or their peripheral
AA-2
Start up the application by entering #reboot↓, and enter
>mode□word↓
>set□b440001c□0↓
>mail□42, 380d0007018080↓
Output of IC600 [16] is returned to IC600 [2] and is output from IC600 [15] by this setting
Sine wave is present at IC600 [16]
NO
IC600 and its peripheral
YES
Sine wave is present at IC600 [2]
NO
Circuit between IC600 [16] and IC600 [2]
YES
Sine wave is present at CN602 [1,2]
NO
Circuit between IC600 [15] and CN602 [1,2]
YES
Replace speaker

Note

To perform this diagnostics, the digital checks of the video block and audio DSP needs to be completed beforehand.


AA-2
After connecting the AUDIO IN and AUDIO OUT with pin cable, enter #diag□audio□analog□1↓
Sound is output from speaker
YES
NO
Muting is NG
YES
NO
Q602, Q603, Q604, or their peripheral
AA-3
Start up the application by entering #reboot↓, and enter
>mode□word↓
>set□b440001c□0↓
>mail□42, 380d0007018080↓
Output of IC600 [15] is returned to IC600 [2] and is output from IC600 [16] by this setting(*1)
Sine wave is present at IC600 [15]
NO
IC600 and its peripheral
YES
Sine wave is present at IC600 [2]
NO
Circuit between IC600 [15] and IC600 [2]
YES
Sine wave is present at CN602 [1,2]
NO
Circuit between IC600 [16] and CN602 [1,2]
YES
Replace speaker

(*1) : Waveforms at IC600 [2, 15] and [16] and those of CN602 [1, 2], CN401 [3] under this state are shown at the end of this section.

Note

To perform this diagnostics, the digital checks of the video block and audio DSP needs to be completed beforehand.

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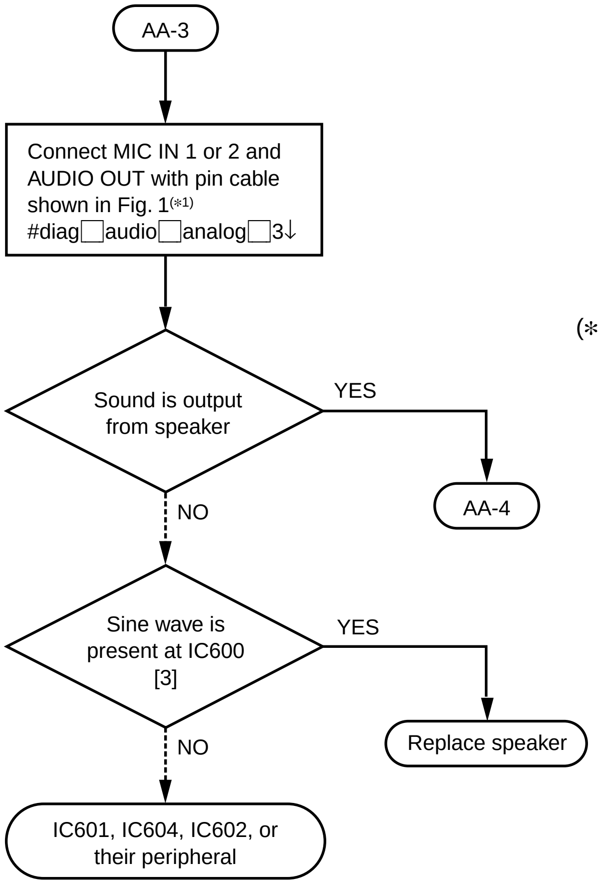

AA-3
Connect MIC IN 1 or 2 and AUDIO OUT with pin cable shown in Fig. 1(*1)
#diag□audio□analog□3↓
Sound is output from speaker
YES
AA-4
NO
Sine wave is present at IC600 [3]
YES
Replace speaker
NO
IC601, IC604, IC602, or their peripheral

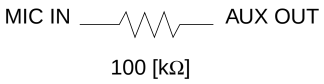

MIC IN
AUX OUT
100 [kΩ]

Fig. 1

(*1) : Waveform at IC600 [3], IC604 [1,3], CN600 [4] and CN601 [2], when the application is started and the command is inputted as follows, under this state are shown at the end of this section.

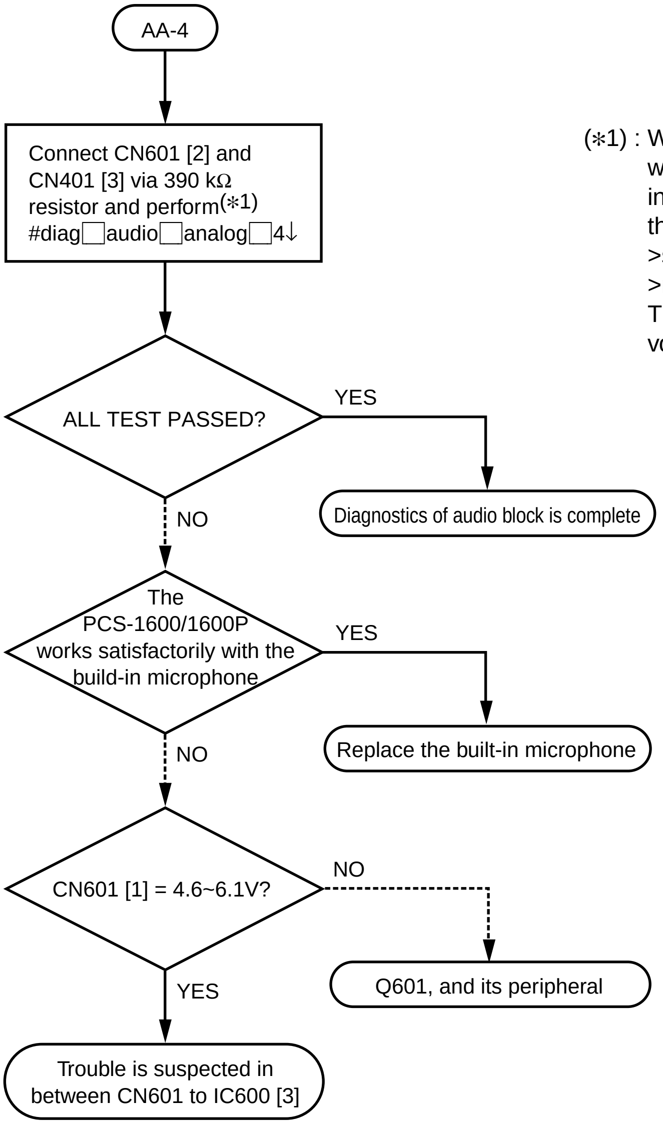
>set□b440001c□0↓

>mail□42,380d0007018080↓

This enables to check the waveforms and voltage level.

Note

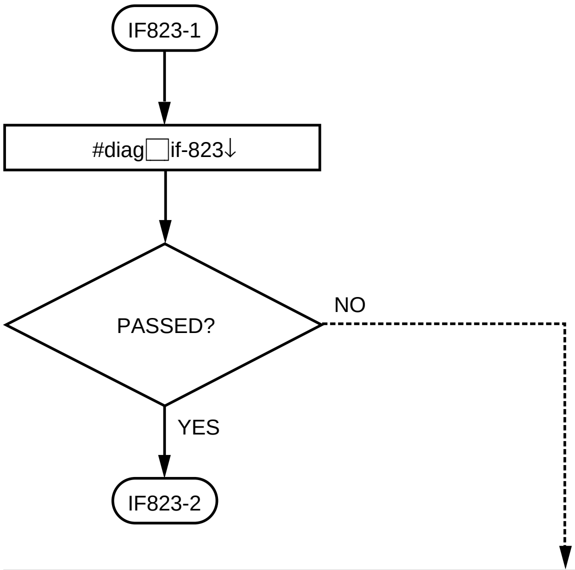
Before starting performing this diagnostics, the digital check of the video block and audio DSP needs to have been completed beforehand.


AA-4
Connect CN601 [2] and CN401 [3] via 390 kΩ resistor and perform(*1) #diag☐audio☐analog☐4↓
ALL TEST PASSED?
YES
Diagnostics of audio block is complete
NO
The PCS-1600/1600P works satisfactorily with the build-in microphone
YES
Replace the built-in microphone
NO
CN601 [1] = 4.6~6.1V?
NO
Q601, and its peripheral
YES
Trouble is suspected in between CN601 to IC600 [3]

(*1) : Waveform at CN601 [2], IC604 [1] and IC600 [3], when the application is started and the command is inputted as follows, under this state are shown at the end of this section.
>set☐b440001c☐0↓
>mail☐42,380d0007018080↓
This enables to check the waveforms and voltage level.

Note

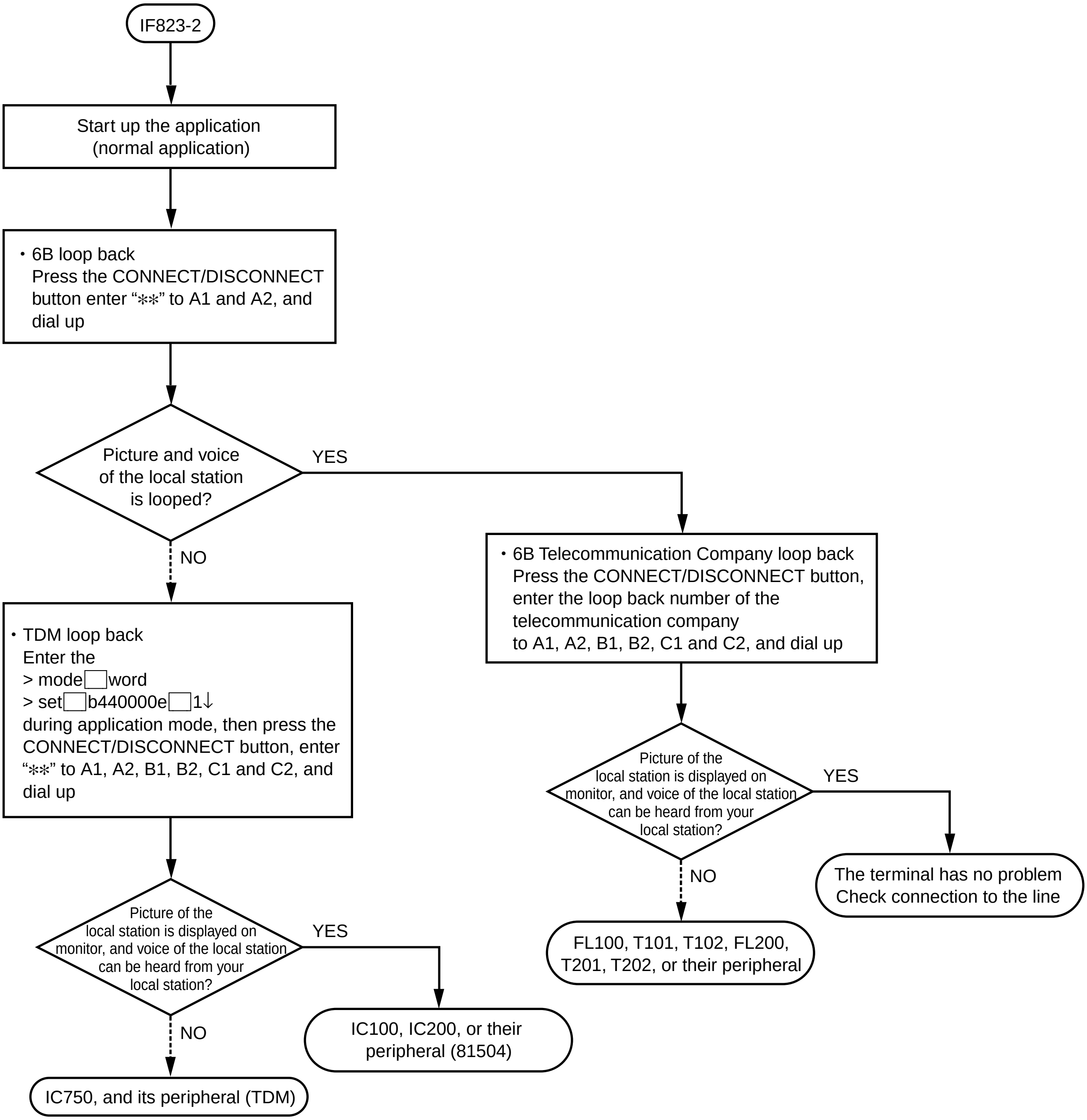
Before starting performing this diagnostics, the digital check of the video block and audio DSP needs to have been completed beforehand.

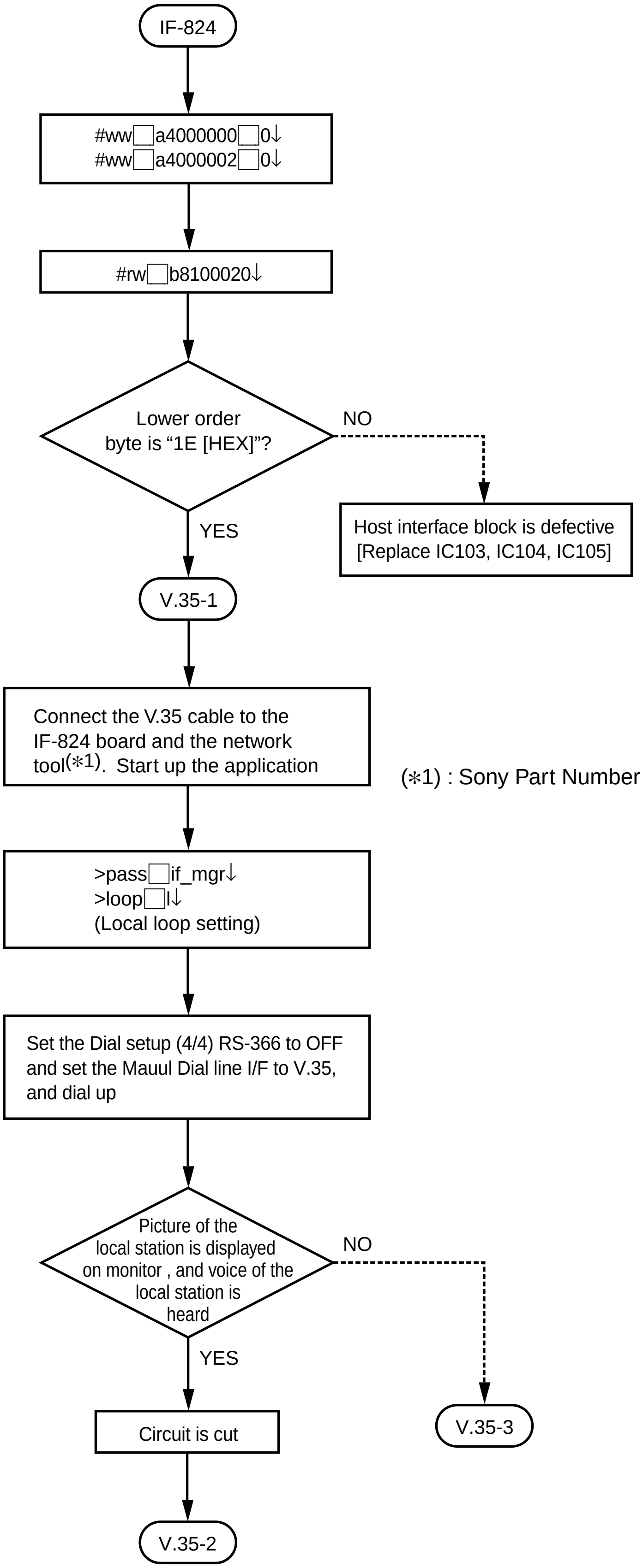


When the diagnostics has resulted in FAIL

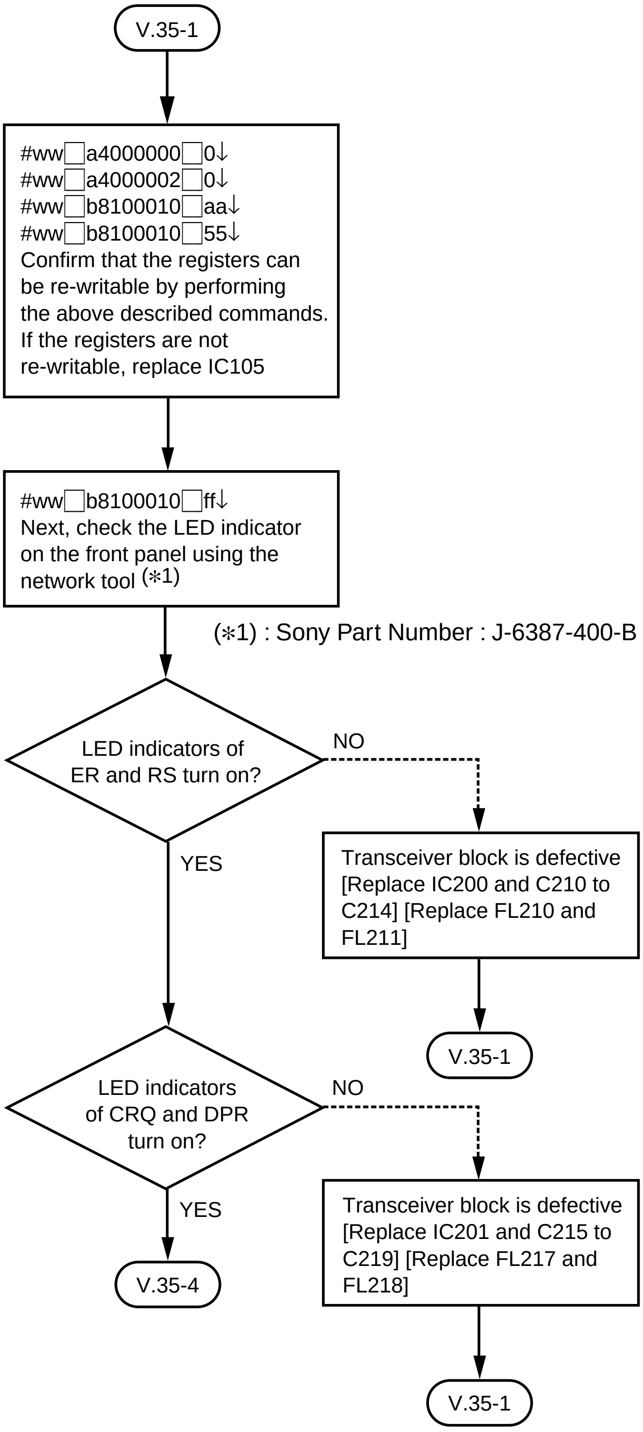
```
user@service[P_]#diag if-823
SYSTEM ALL INITIALIZE
  All Reset & power off => Power turn ON => Reset clear => OK

Option BRI (IF-823) diagnostics start...
  0.  BRI Option Board Detection : DETECTED
  1.  Set download mode
  2.  Testing SRAM for BRI firmware  : PASSED                 →  IC311, IC312 or their peripheral
  3.  Download BRI firmware : done
  4.  Set normal mode : done
  5a. Testing SRAM for firmware work area (BRI-2): PASSED  →  IC100 and its peripheral
  5b. Testing SRAM for firmware work area (BRI-3): PASSED  →  IC200 and its peripheral
  6a. Checking initialize message from BRI-2 : PASSED      →  IC100 and its peripheral
  6b. Checking initialize message from BRI-3 : PASSED      →  IC200 and its peripheral
  7.  BRI Firmware version : [3.27]
```

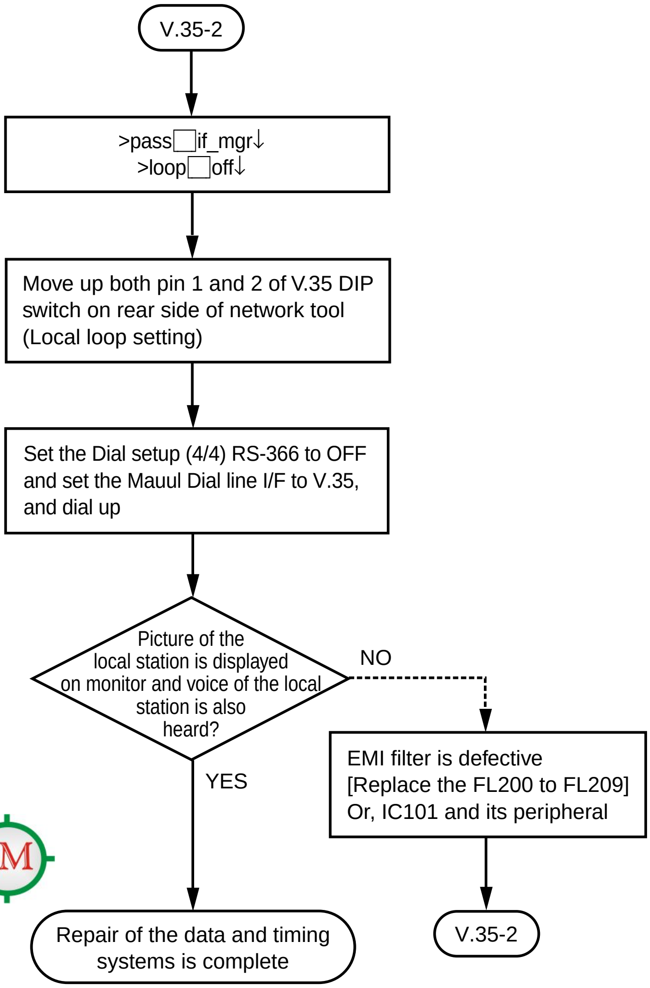

IF823-2
Start up the application (normal application)
• 6B loop back Press the CONNECT/DISCONNECT button enter "✽✽" to A1 and A2, and dial up
Picture and voice of the local station is looped?
YES
NO
• 6B Telecommunication Company loop back Press the CONNECT/DISCONNECT button, enter the loop back number of the telecommunication company to A1, A2, B1, B2, C1 and C2, and dial up
• TDM loop back Enter the
> mode□word
> set□b440000e□1↓
during application mode, then press the CONNECT/DISCONNECT button, enter "✽✽" to A1, A2, B1, B2, C1 and C2, and dial up
Picture of the local station is displayed on monitor, and voice of the local station can be heard from your local station?
YES
NO
The terminal has no problem Check connection to the line
FL100, T101, T102, FL200, T201, T202, or their peripheral
Picture of the local station is displayed on monitor, and voice of the local station can be heard from your local station?
YES
NO
IC100, IC200, or their peripheral (81504)
IC750, and its peripheral (TDM)

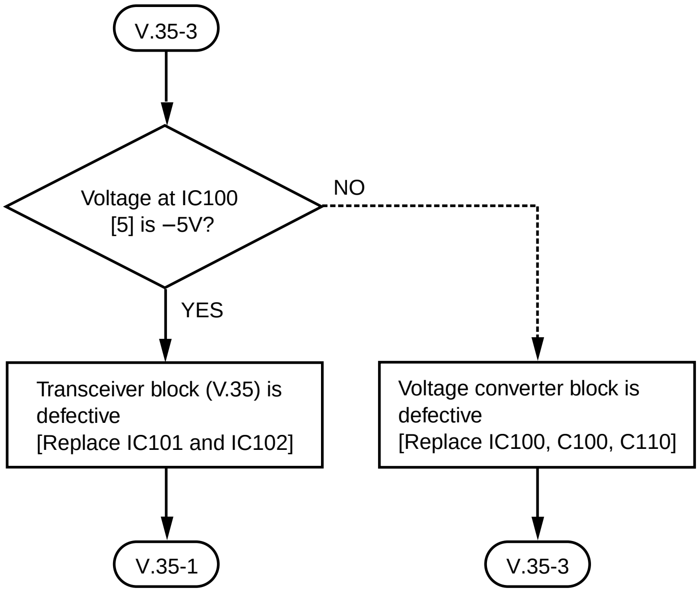

IF-824
#ww□a4000000□0↓
#ww□a4000002□0↓
#rw□b8100020↓
Lower order byte is "1E [HEX]"?
NO
Host interface block is defective [Replace IC103, IC104, IC105]
YES
V.35-1
Connect the V.35 cable to the IF-824 board and the network tool(∗1). Start up the application
>pass□if_mgr↓
>loop□l↓
(Local loop setting)
Set the Dial setup (4/4) RS-366 to OFF and set the Mauul Dial line I/F to V.35, and dial up
Picture of the local station is displayed on monitor , and voice of the local station is heard
NO
YES
Circuit is cut
V.35-3
V.35-2

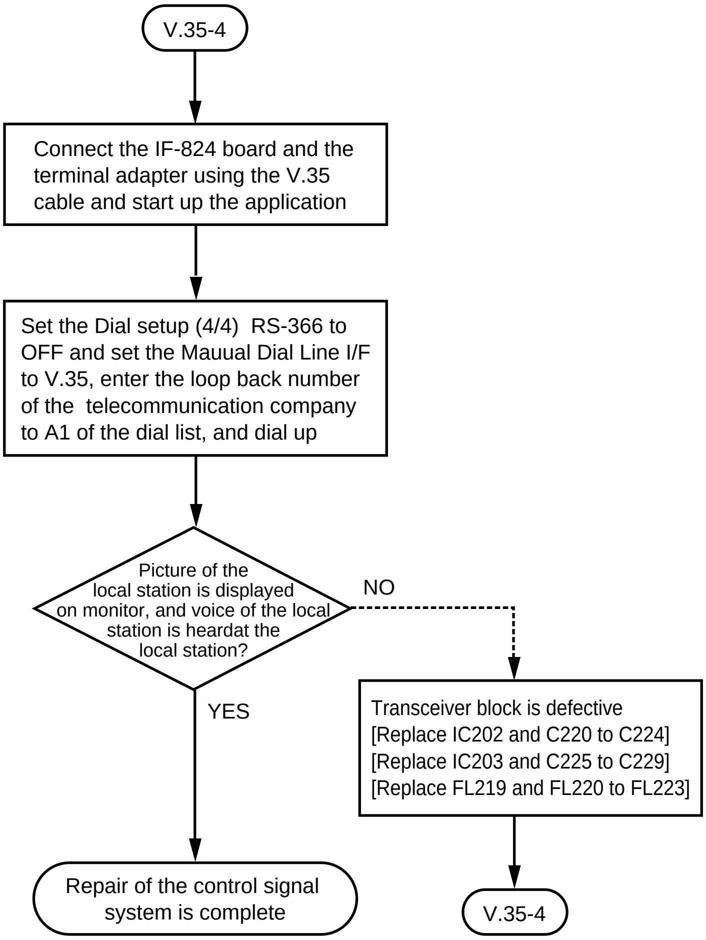
(∗1) : Sony Part Number : J-6387-400-B

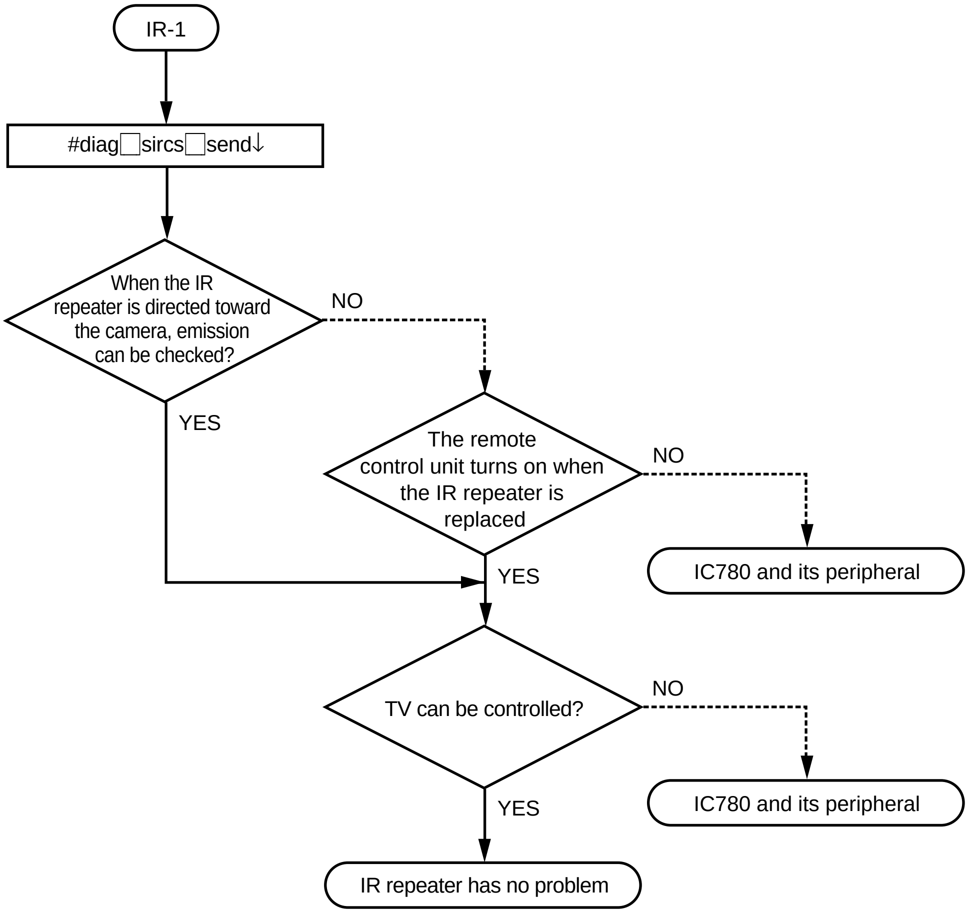

V.35-1
#ww□a4000000□0↓
#ww□a4000002□0↓
#ww□b8100010□aa↓
#ww□b8100010□55↓
Confirm that the registers can be re-writable by performing the above described commands. If the registers are not re-writable, replace IC105
#ww□b8100010□ff↓
Next, check the LED indicator on the front panel using the network tool (*1)
LED indicators of ER and RS turn on?
NO
Transceiver block is defective [Replace IC200 and C210 to C214] [Replace FL210 and FL211]
V.35-1
YES
LED indicators of CRQ and DPR turn on?
NO
Transceiver block is defective [Replace IC201 and C215 to C219] [Replace FL217 and FL218]
V.35-1
YES
V.35-4

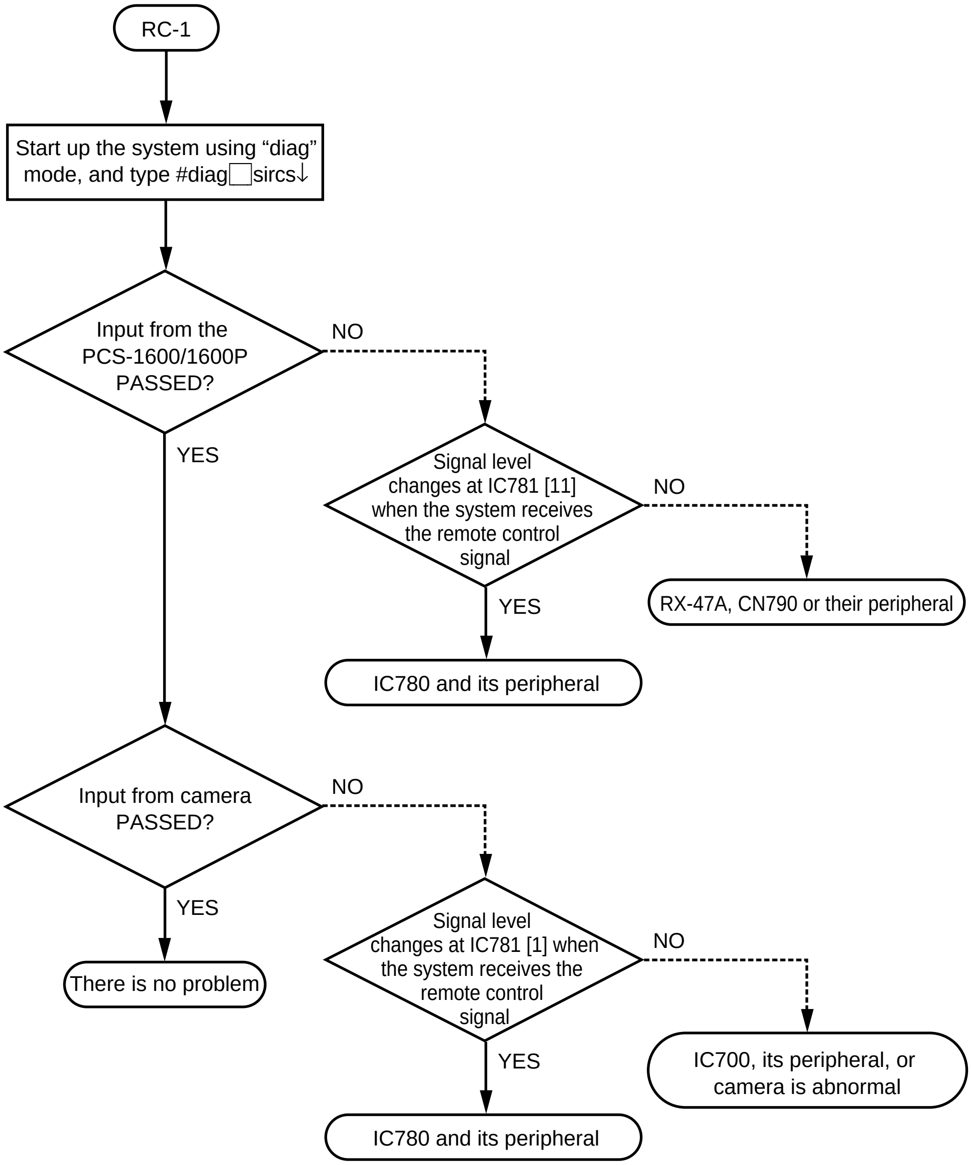
(*1) : Sony Part Number : J-6387-400-B


V.35-2
>pass□if_mgr↓
>loop□off↓
Move up both pin 1 and 2 of V.35 DIP switch on rear side of network tool (Local loop setting)
Set the Dial setup (4/4) RS-366 to OFF and set the Mauul Dial line I/F to V.35, and dial up
Picture of the local station is displayed on monitor and voice of the local station is also heard?
NO
EMI filter is defective [Replace the FL200 to FL209] Or, IC101 and its peripheral
V.35-2
YES
Repair of the data and timing systems is complete


V.35-3
Voltage at IC100 [5] is −5V?
NO
YES
Transceiver block (V.35) is defective [Replace IC101 and IC102]
Voltage converter block is defective [Replace IC100, C100, C110]
V.35-1
V.35-3


V.35-4
Connect the IF-824 board and the terminal adapter using the V.35 cable and start up the application
Set the Dial setup (4/4) RS-366 to OFF and set the Mauual Dial Line I/F to V.35, enter the loop back number of the telecommunication company to A1 of the dial list, and dial up
Picture of the local station is displayed on monitor, and voice of the local station is heardat the local station?
NO
YES
Transceiver block is defective
[Replace IC202 and C220 to C224]
[Replace IC203 and C225 to C229]
[Replace FL219 and FL220 to FL223]
Repair of the control signal system is complete
V.35-4


IR-1
#diag□sircs□send↓
When the IR repeater is directed toward the camera, emission can be checked?
NO
YES
The remote control unit turns on when the IR repeater is replaced
NO
IC780 and its peripheral
YES
TV can be controlled?
NO
IC780 and its peripheral
YES
IR repeater has no problem


RC-1
Start up the system using "diag" mode, and type #diag␣sircs↓
Input from the PCS-1600/1600P PASSED?
NO
YES
Signal level changes at IC781 [11] when the system receives the remote control signal
NO
YES
RX-47A, CN790 or their peripheral
IC780 and its peripheral
Input from camera PASSED?
NO
YES
There is no problem
Signal level changes at IC781 [1] when the system receives the remote control signal
NO
YES
IC700, its peripheral, or camera is abnormal
IC780 and its peripheral

4-2-3. When Self-diagnostics Results in FAIL

• HOST PLD	A-1
• HOST BUS	A-2
• SH-4 RTC	A-3
• POWER CONTROL	A-4
• CAMERA CONTROL	A-5
• BRI	A-6
• VCP SRAM	A-7
• VIDEO	A-8
• INTERRUET	A-9
• ETHERNET	A-10
• SIRCS	A-11
• LED	A-12

Notes

- When self-diagnostics results in FAIL, input the following commands again after repair is complete.:

  `#diag□auto↓`

  Then, confirm that the system passes all the diagnostics items.
- To diagnose A-x of this list individually, refer to the subsequent page.

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Diagnostics command (∗1)	Diagnostics command (∗2)	Locations to be diagnosed
auto	hostpld (A-1)	Host PLD (IC110 and its peripheral)
	hostbus (A-2)	SH-CPU bus of the 5V, 3.3V-2 block
	rtc (A-3)	Built-in real time clock of SH-4
	power (A-4)	Power ON/OFFdiagnostics of the stand-by power supply area
	camera (A-5)	Camera control block
	bri (A-6)	BRI block
	vcpram (A-7)	SRAM test of VCP (IC300)
	video (A-8)	Video encoder, decoder, VCP, VIA, VOA
	ethernet(A-9)	Precise diagnostic of ethernet block
	interrupt (A-10)	Diagnostics of the interrupt signal lines
	sircs (A-11)	Diagnostic of SIRCS receiver block
	led (A-12)	Diagnostic of the POWER and STANDBY LED indicators
	videoblock(A-8)	Precise diagnostic of video block
	vcpcolor (∗3)	VCP Color bar output
	audio	Diagnostic of the audio block audio□digital↓ : diagnostics of digital part audio□analog□[0,1,3,4]↓ : diagnostics of analog part **Note** When you want to perform this diagnostics, the video block must have been completed in advance
	irout	Diagnostic of SIRCS transmitter block
	if-823	Diagnostics of the BRI control and memory of the IF-823 board

(∗1) : The commands of this column execute continuously the commands that are shown in the right column.
(∗2) : The flowchart indexes that are shown in parenthesis () show the commands that are used to diagnose the flowchart A-x again.
(∗3) : The VCP Color command can be used during stopper or finished the Video block diagnostics abter VCP has been downloaded, but it cannot be used during VPC does not started up normally.

Note

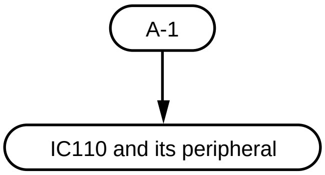
- Before using these self-diagnostics commands, inputting the following entries is required in order to prepare to use the self-diagnostics software.

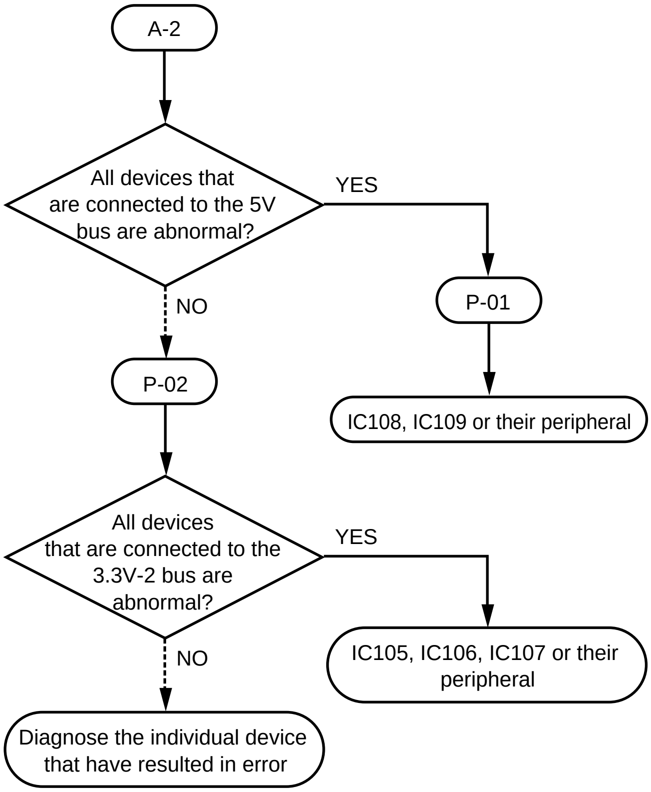
  ```
  # loadmodule□f00000↓
  ```

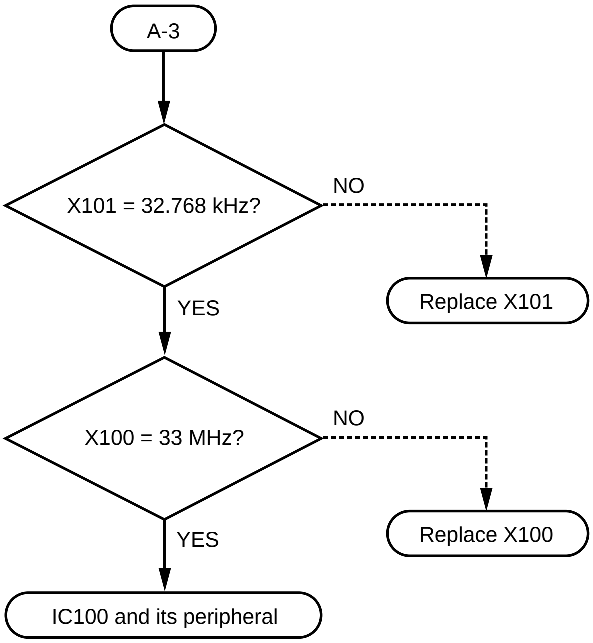
- The commands that are listed above can be used independently but they may not work correctly depending on the setting or trouble conditions. To diagnose the troubles without fail, enter "#diag□auto↓", confirm that the system passes all the tests and perform diagnostics individually.

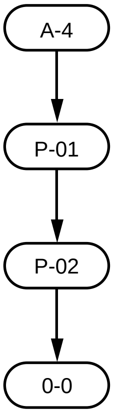
Example of using the command:

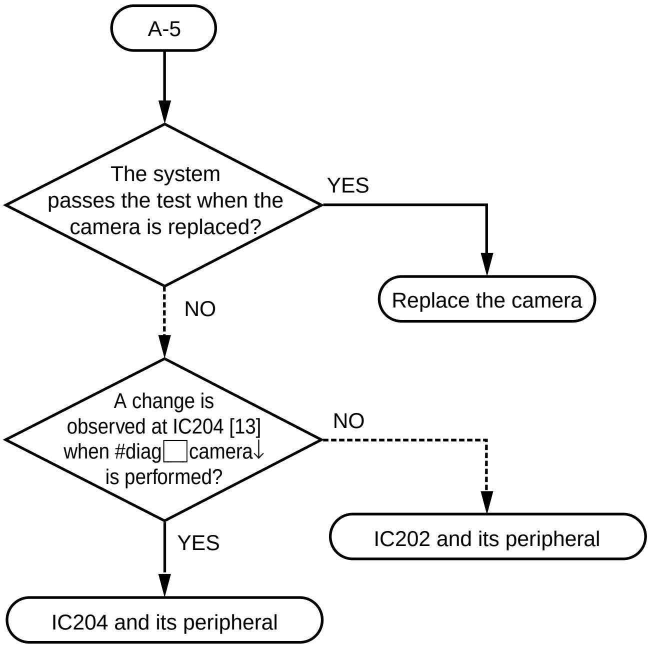
```
# loadmodule □f00000↓
# diag□video↓
#diag□audio□digital↓
#diag□auto↓
```

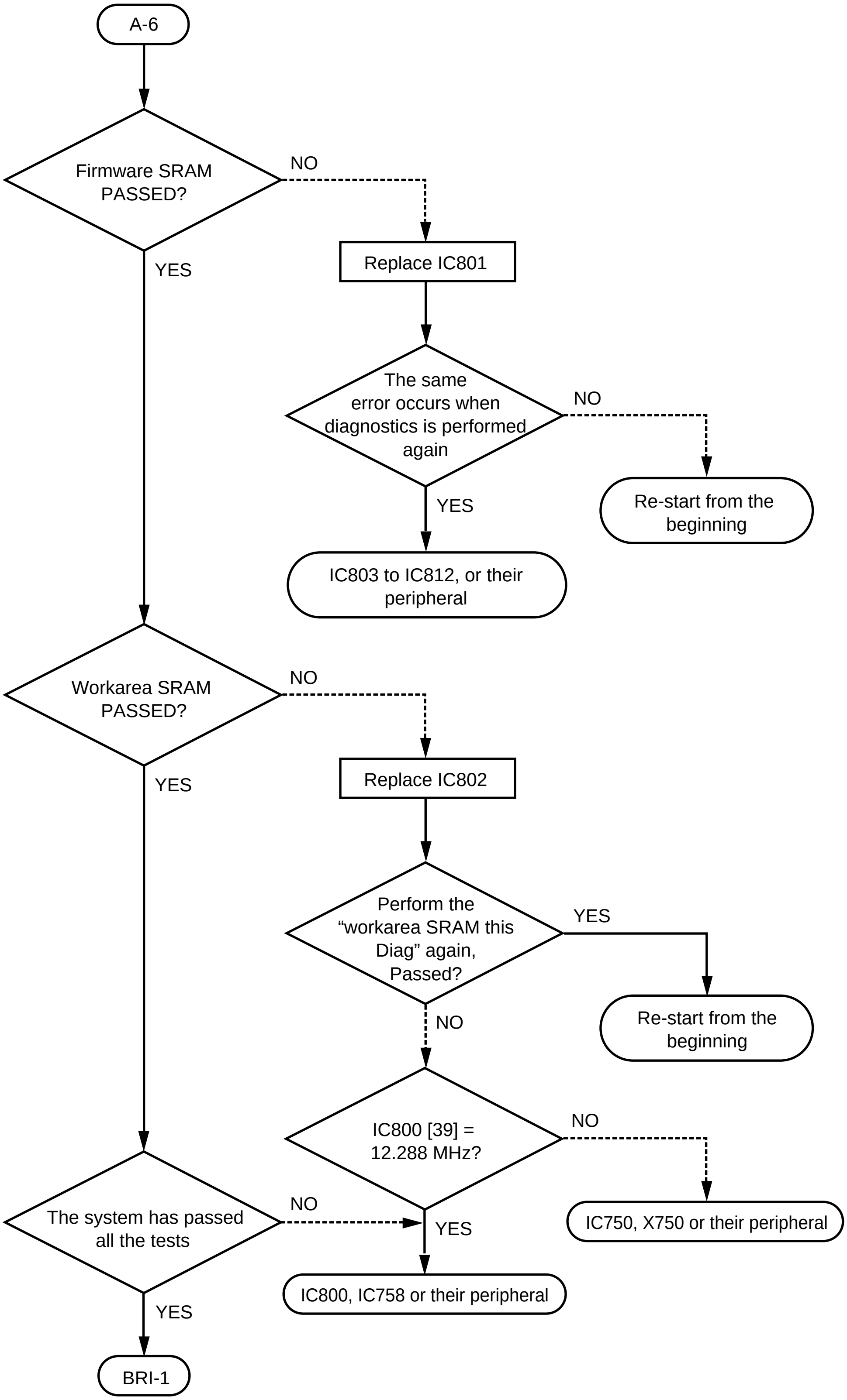

A-1
IC110 and its peripheral

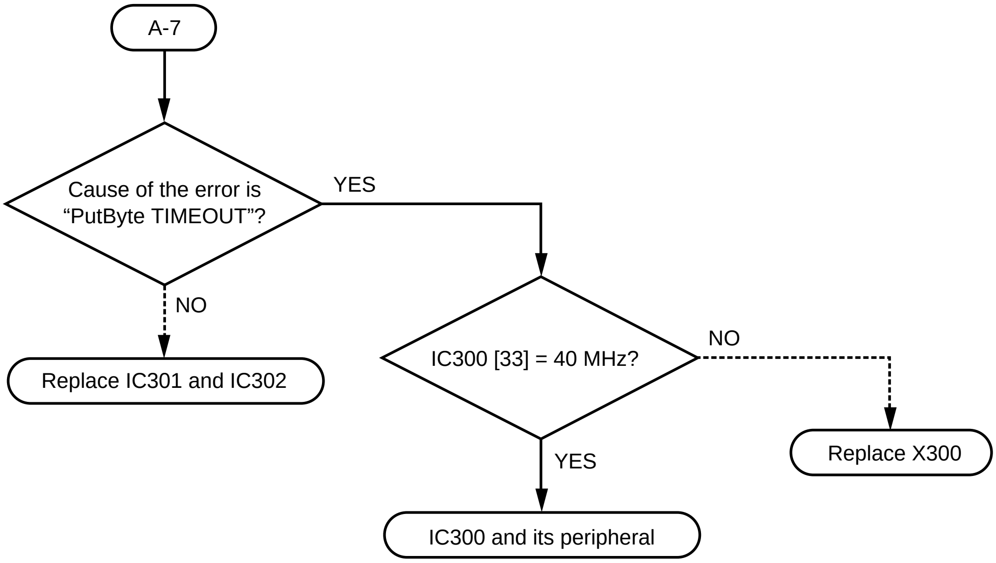

A-2
All devices that
are connected to the 5V
bus are abnormal?
YES
NO
P-01
IC108, IC109 or their peripheral
P-02
All devices
that are connected to the
3.3V-2 bus are
abnormal?
YES
NO
IC105, IC106, IC107 or their
peripheral
Diagnose the individual device
that have resulted in error

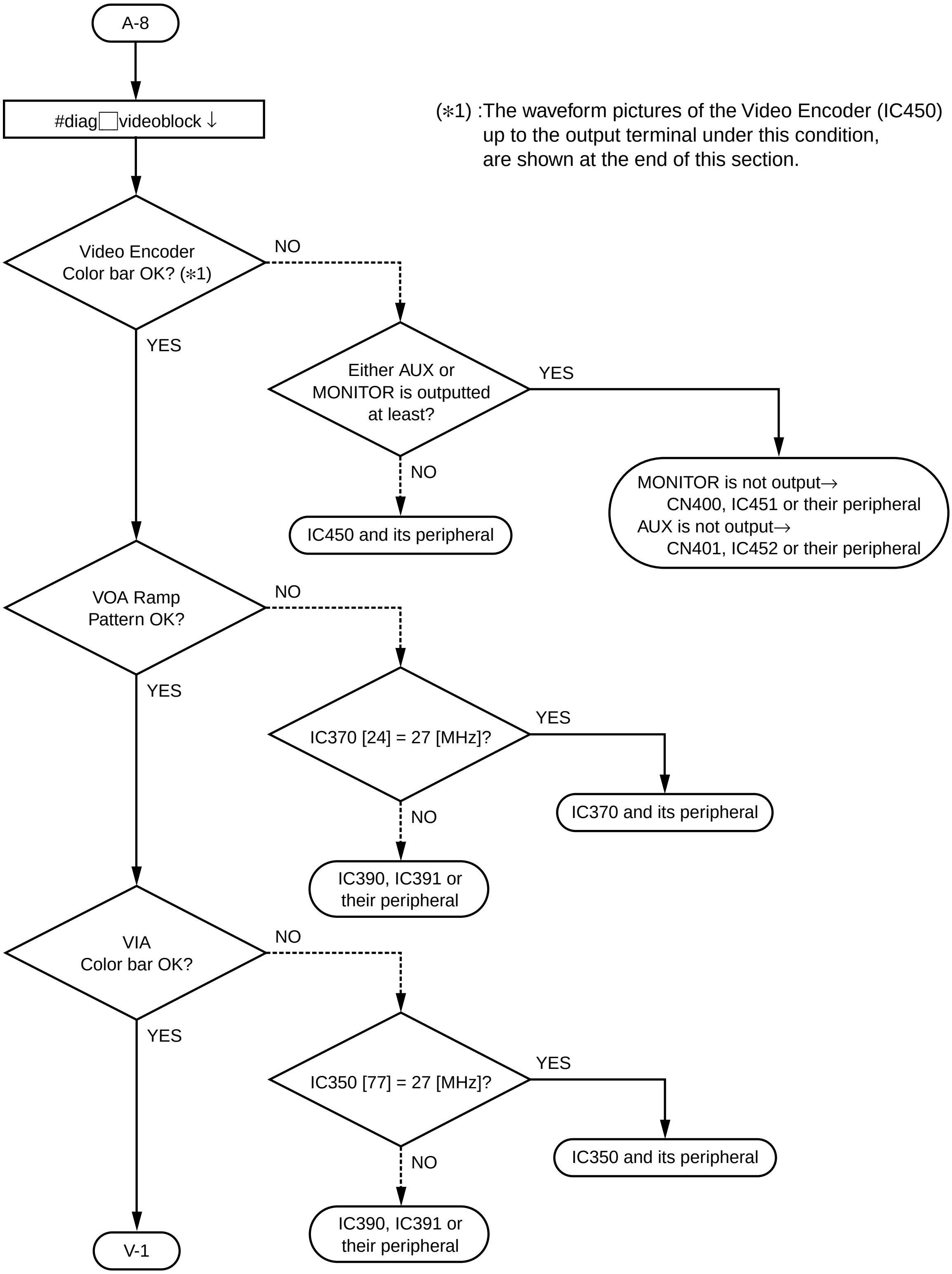

A-3
X101 = 32.768 kHz?
NO
Replace X101
YES
X100 = 33 MHz?
NO
Replace X100
YES
IC100 and its peripheral


A-4
P-01
P-02
0-0


A-5
The system passes the test when the camera is replaced?
YES
Replace the camera
NO
A change is observed at IC204 [13] when #diag□camera↓ is performed?
NO
IC202 and its peripheral
YES
IC204 and its peripheral


A-6
Firmware SRAM PASSED?
NO
YES
Replace IC801
The same error occurs when diagnostics is performed again
NO
YES
Re-start from the beginning
IC803 to IC812, or their peripheral
Workarea SRAM PASSED?
NO
YES
Replace IC802
Perform the "workarea SRAM this Diag" again, Passed?
YES
NO
Re-start from the beginning
IC800 [39] = 12.288 MHz?
NO
YES
IC750, X750 or their peripheral
The system has passed all the tests
NO
YES
IC800, IC758 or their peripheral
BRI-1

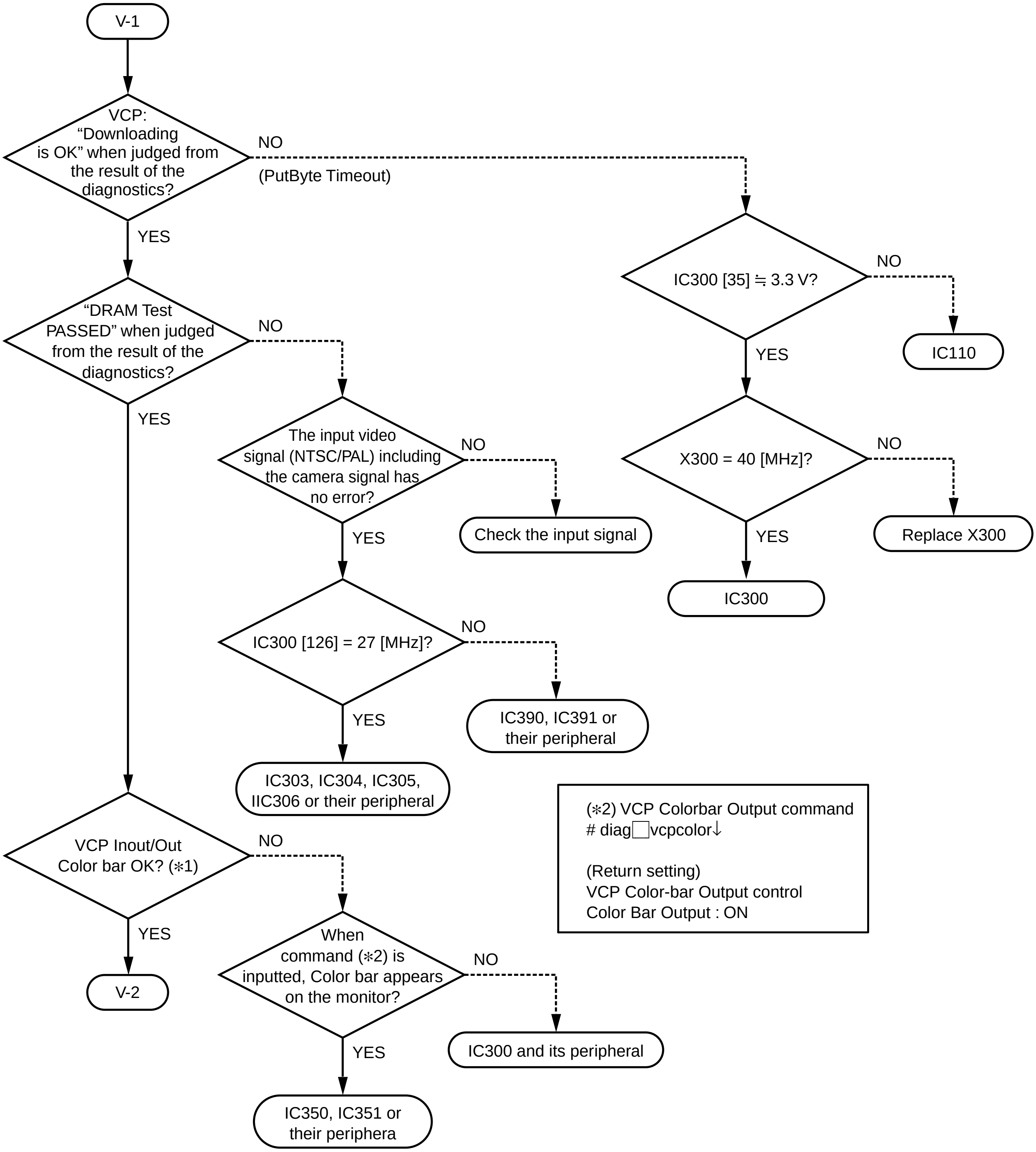

A-7
Cause of the error is "PutByte TIMEOUT"?
YES
NO
Replace IC301 and IC302
IC300 [33] = 40 MHz?
NO
Replace X300
YES
IC300 and its peripheral


A-8
#diag☐videoblock ↓
Video Encoder Color bar OK? (∗1)
NO
YES
Either AUX or MONITOR is outputted at least?
YES
NO
IC450 and its peripheral
MONITOR is not output→ CN400, IC451 or their peripheral
AUX is not output→ CN401, IC452 or their peripheral
VOA Ramp Pattern OK?
NO
YES
IC370 [24] = 27 [MHz]?
YES
NO
IC370 and its peripheral
IC390, IC391 or their peripheral
VIA Color bar OK?
NO
YES
IC350 [77] = 27 [MHz]?
YES
NO
IC350 and its peripheral
IC390, IC391 or their peripheral
V-1

(∗1) :The waveform pictures of the Video Encoder (IC450) up to the output terminal under this condition, are shown at the end of this section.

Note

- When entirely no pictures are outputted from the video system block, the +10 V power supply may be defective.
  IC904 and its peripheral supply the +10 V power.Confirm that the +10 V power is supplied to the devices following the circuit diagram.


V-1
VCP: "Downloading is OK" when judged from the result of the diagnostics?
NO
(PutByte Timeout)
YES
IC300 [35] ≒ 3.3 V?
NO
IC110
YES
"DRAM Test PASSED" when judged from the result of the diagnostics?
NO
YES
The input video signal (NTSC/PAL) including the camera signal has no error?
NO
Check the input signal
YES
X300 = 40 [MHz]?
NO
Replace X300
YES
IC300
IC300 [126] = 27 [MHz]?
NO
IC390, IC391 or their peripheral
YES
IC303, IC304, IC305, IIC306 or their peripheral
VCP Inout/Out Color bar OK? (∗1)
NO
YES
V-2
When command (∗2) is inputted, Color bar appears on the monitor?
NO
IC300 and its peripheral
YES
IC350, IC351 or their periphera

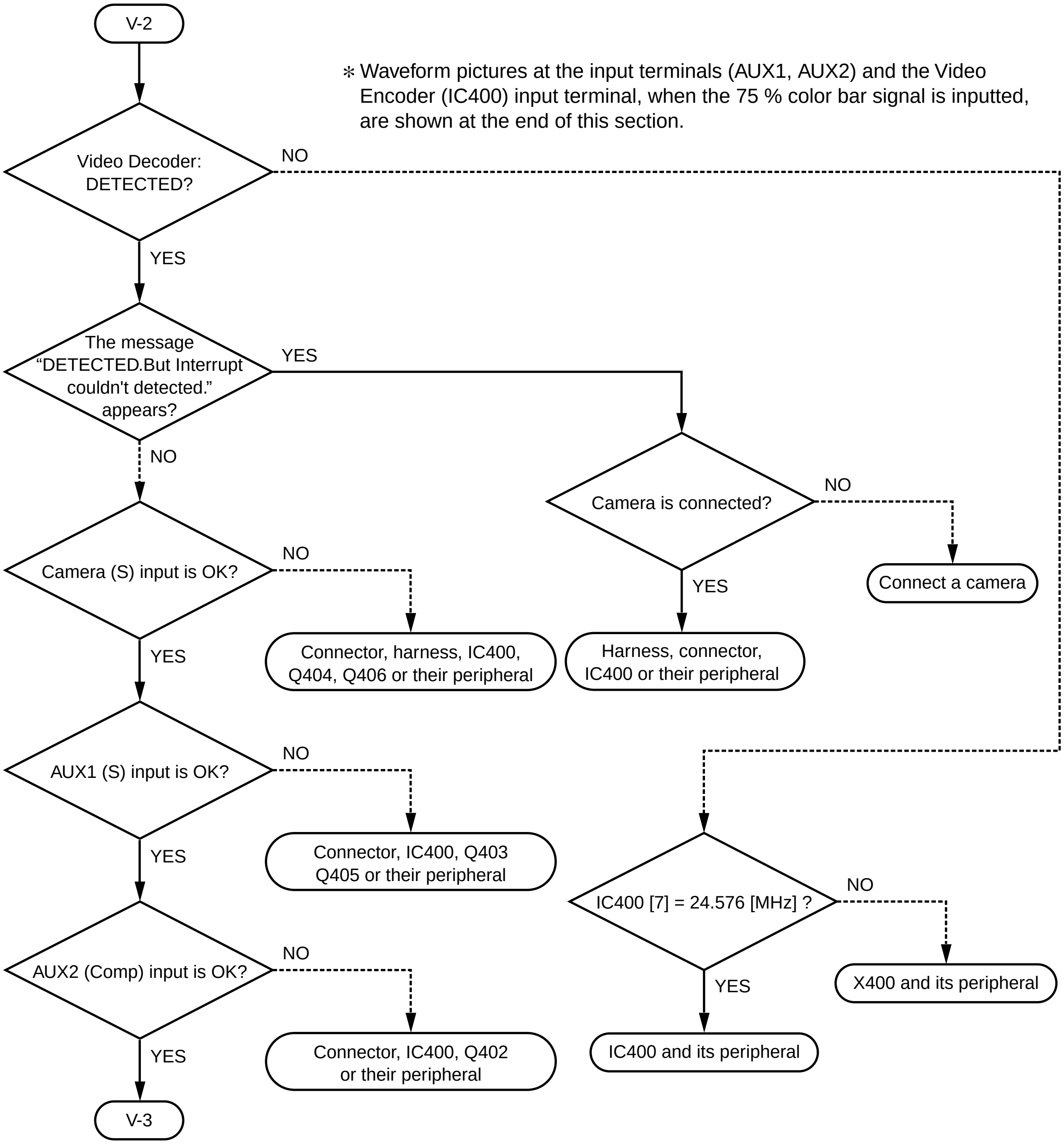
(∗2) VCP Colorbar Output command
# diag☐vcpcolor↓

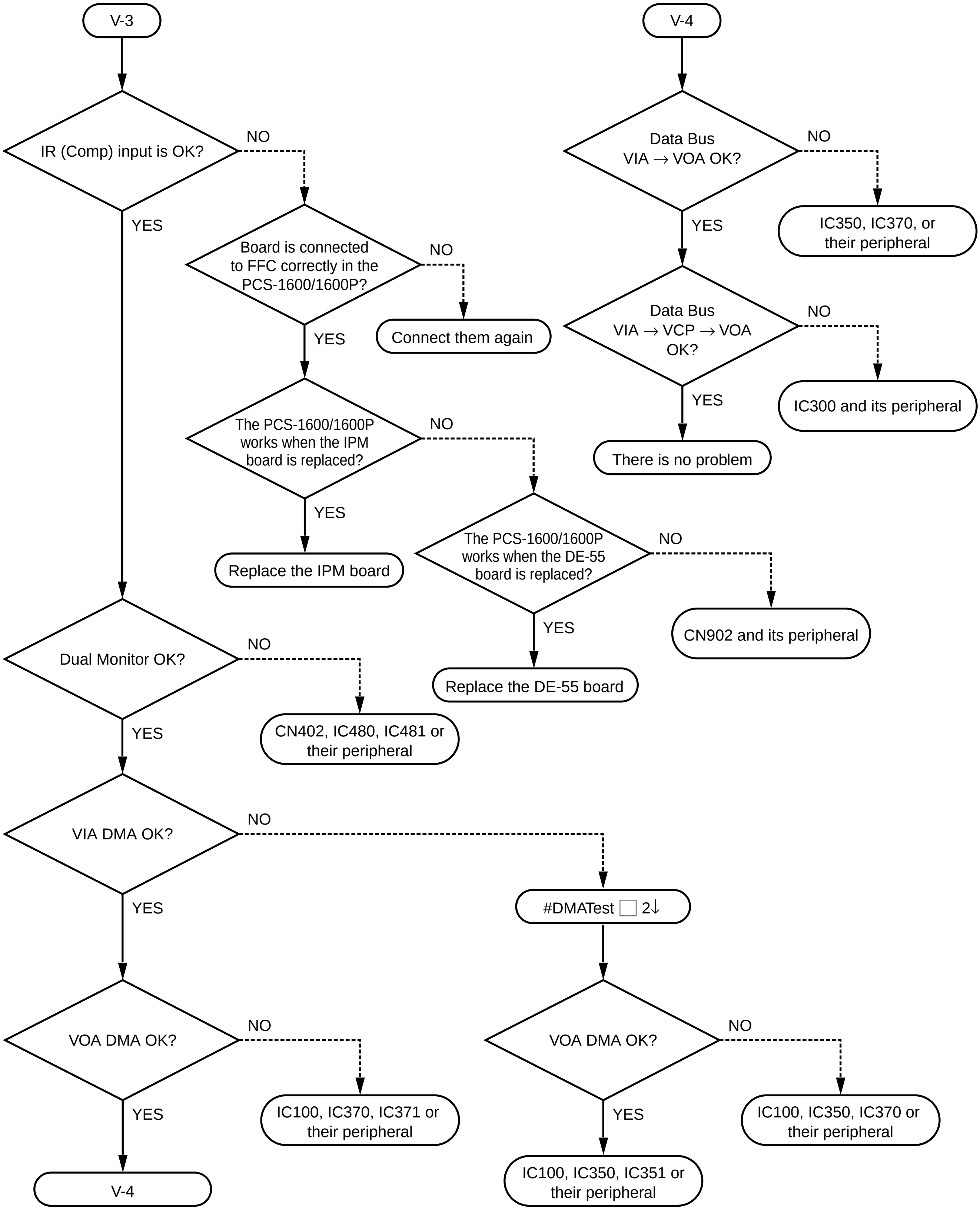
(Return setting)
VCP Color-bar Output control
Color Bar Output : ON

Note

- When an error occurs during the DRAM test of VCP, the DRAM may be defective, or the clock (27 MHz, V-Sync...) of the video system may be not input correctly.
- When the application does not work even though the system has PASSED self-diagnostics, a trouble may be existing inside the VCP. Replace the VCP (IC300).
- The VCP Color command (∗2) can be used during stopper or finished the Video block diagnostics abter VCP has been downloaded, but it cannot be used during VPC does not started up noermally.

✻ Waveform pictures at the input terminals (AUX1, AUX2) and the Video Encoder (IC400) input terminal, when the 75 % color bar signal is inputted, are shown at the end of this section.


V-2
Video Decoder: DETECTED?
NO
YES
The message "DETECTED.But Interrupt couldn't detected." appears?
YES
NO
Camera is connected?
NO
Connect a camera
YES
Harness, connector, IC400 or their peripheral
Camera (S) input is OK?
NO
Connector, harness, IC400, Q404, Q406 or their peripheral
YES
AUX1 (S) input is OK?
NO
Connector, IC400, Q403 Q405 or their peripheral
YES
AUX2 (Comp) input is OK?
NO
Connector, IC400, Q402 or their peripheral
YES
V-3
IC400 [7] = 24.576 [MHz] ?
NO
X400 and its peripheral
YES
IC400 and its peripheral


V-3
IR (Comp) input is OK?
NO
YES
Board is connected to FFC correctly in the PCS-1600/1600P?
NO
Connect them again
YES
The PCS-1600/1600P works when the IPM board is replaced?
NO
YES
Replace the IPM board
The PCS-1600/1600P works when the DE-55 board is replaced?
NO
CN902 and its peripheral
YES
Replace the DE-55 board
Dual Monitor OK?
NO
CN402, IC480, IC481 or their peripheral
YES
VIA DMA OK?
NO
#DMATest □ 2↓
VOA DMA OK?
NO
IC100, IC350, IC370 or their peripheral
YES
IC100, IC350, IC351 or their peripheral
YES
VOA DMA OK?
NO
IC100, IC370, IC371 or their peripheral
YES
V-4
V-4
Data Bus VIA → VOA OK?
NO
IC350, IC370, or their peripheral
YES
Data Bus VIA → VCP → VOA OK?
NO
IC300 and its peripheral
YES
There is no problem

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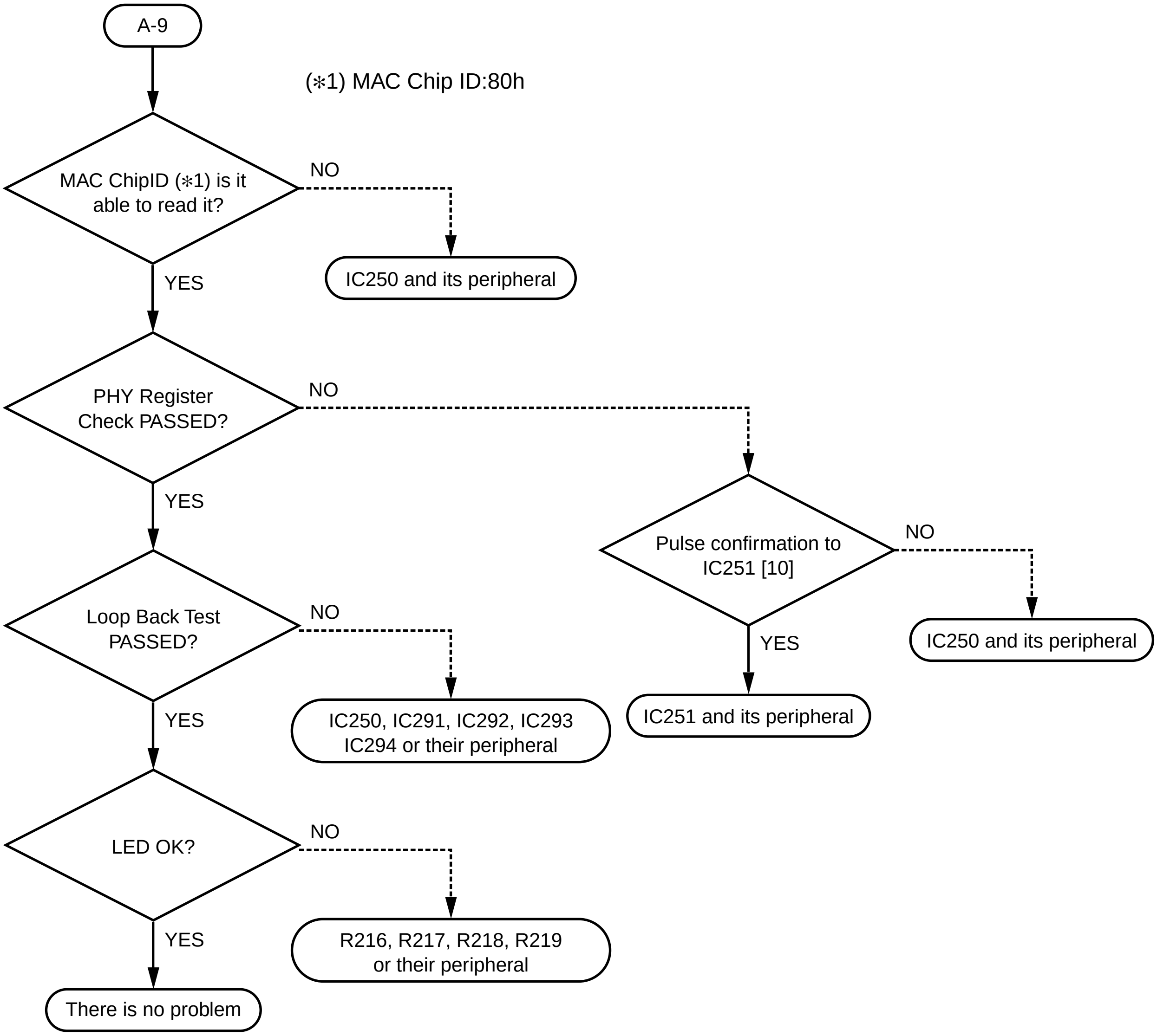
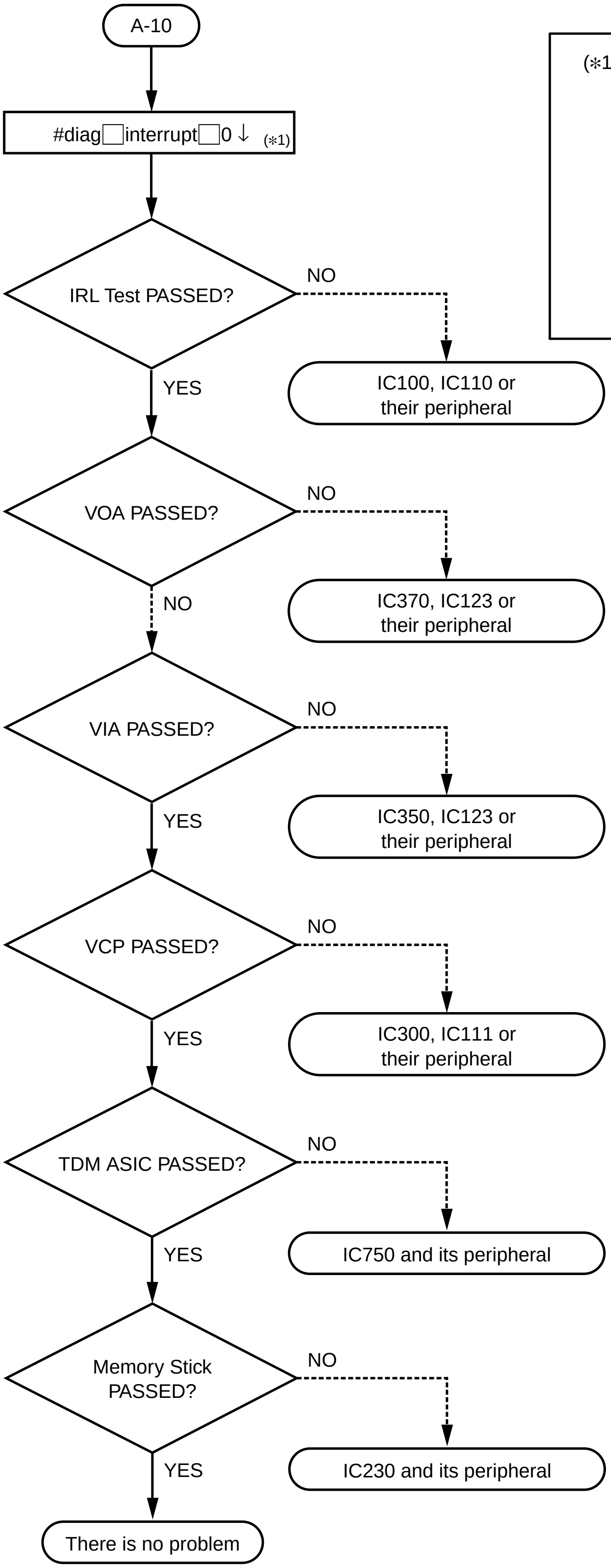
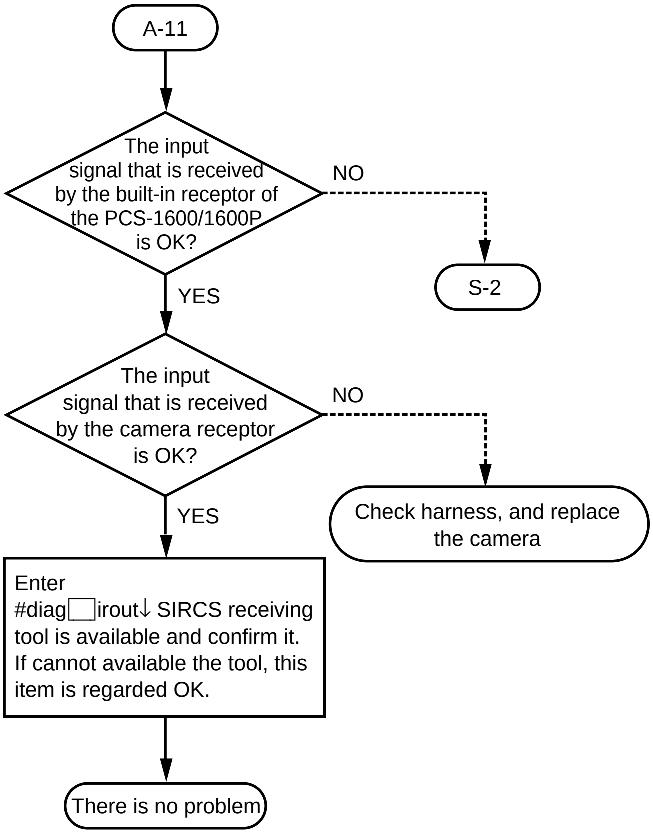
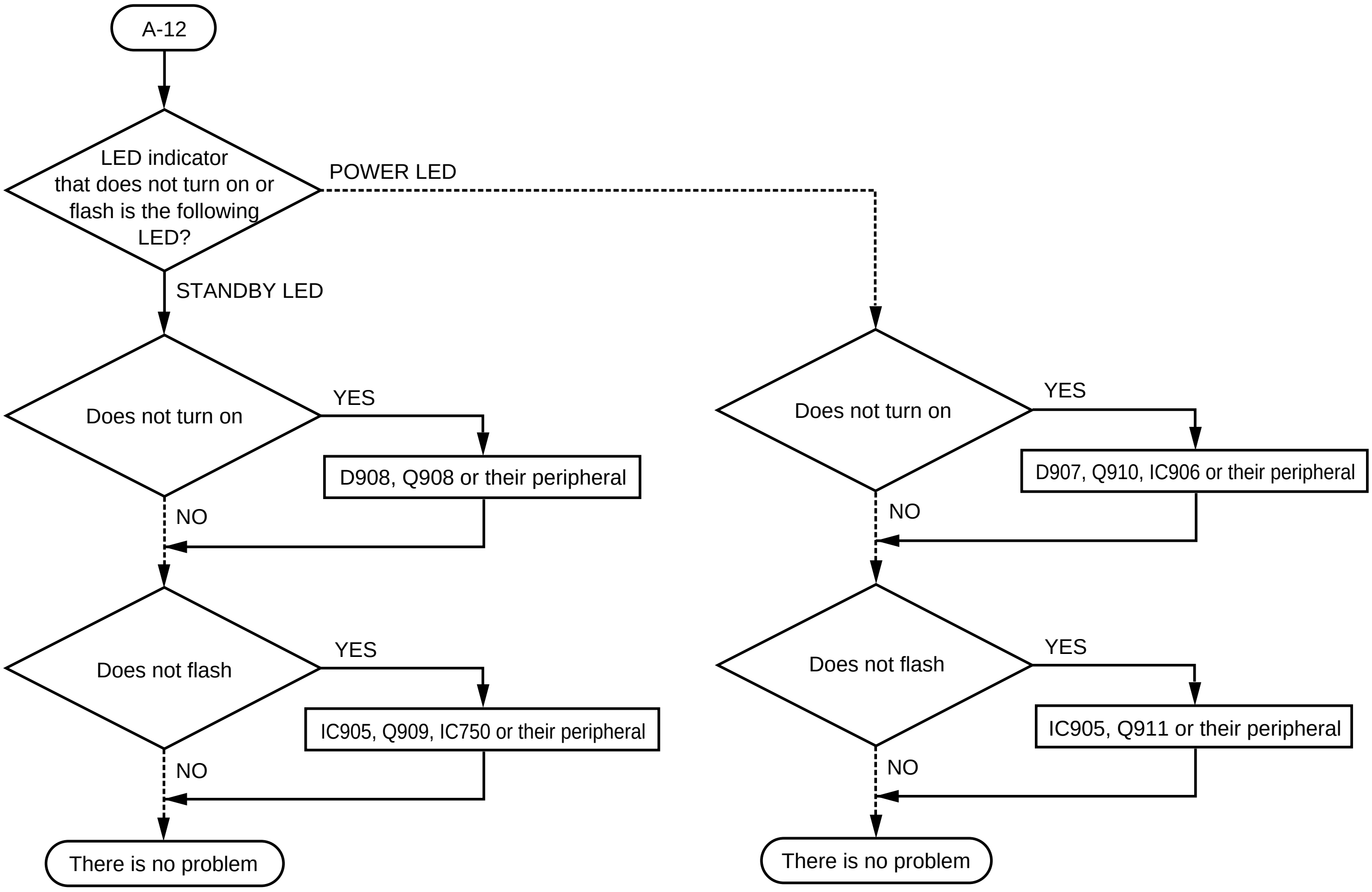

A-9
(∗1) MAC Chip ID:80h
MAC ChipID (∗1) is it able to read it?
NO
IC250 and its peripheral
YES
PHY Register Check PASSED?
NO
Pulse confirmation to IC251 [10]
NO
IC250 and its peripheral
YES
IC251 and its peripheral
YES
Loop Back Test PASSED?
NO
IC250, IC291, IC292, IC293 IC294 or their peripheral
YES
LED OK?
NO
R216, R217, R218, R219 or their peripheral
YES
There is no problem


A-10
#diag□interrupt□0 ↓ (⁎1)
IRL Test PASSED?
NO
IC100, IC110 or their peripheral
YES
VOA PASSED?
NO
IC370, IC123 or their peripheral
NO
VIA PASSED?
NO
IC350, IC123 or their peripheral
YES
VCP PASSED?
NO
IC300, IC111 or their peripheral
YES
TDM ASIC PASSED?
NO
IC750 and its peripheral
YES
Memory Stick PASSED?
NO
IC230 and its peripheral
YES
There is no problem

(⁎1) The diagnostic of interruption can be perfoemed with following option in every device.

#diag□interrupt□0↓ : ALL
#diag□interrupt□1↓ : IRL Test
#diag□interrupt□2↓ : VOA
#diag□interrupt□3↓ : VIA
#diag□interrupt□4↓ : VCP
#diag□interrupt□5↓ : TDM ASIC
#diag□interrupt□6↓ : Memory Stick


A-11
The input signal that is received by the built-in receptor of the PCS-1600/1600P is OK?
NO
S-2
YES
The input signal that is received by the camera receptor is OK?
NO
Check harness, and replace the camera
YES
Enter #diag☐irout↓ SIRCS receiving tool is available and confirm it. If cannot available the tool, this item is regarded OK.
There is no problem

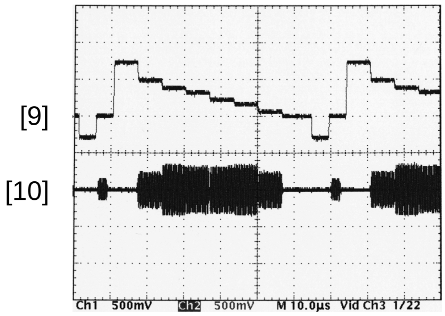

A-12
LED indicator that does not turn on or flash is the following LED?
POWER LED
STANDBY LED
Does not turn on
YES
D908, Q908 or their peripheral
NO
Does not flash
YES
IC905, Q909, IC750 or their peripheral
NO
There is no problem
Does not turn on
YES
D907, Q910, IC906 or their peripheral
NO
Does not flash
YES
IC905, Q911 or their peripheral
NO
There is no problem

WAVE FORM

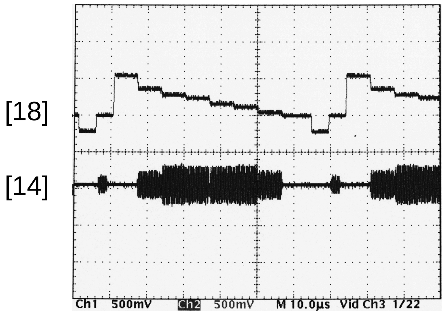
NTSC

Video Input (AUX1, AUX2, IC400)
- 75 % color bars

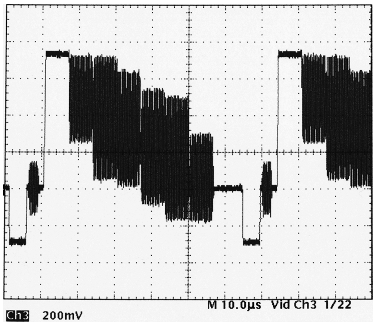
- CN400 [9, 10]



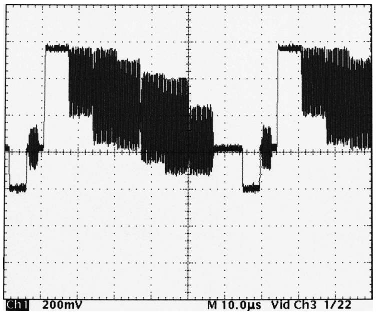
- IC400 [18, 14]



- CN401 [5]



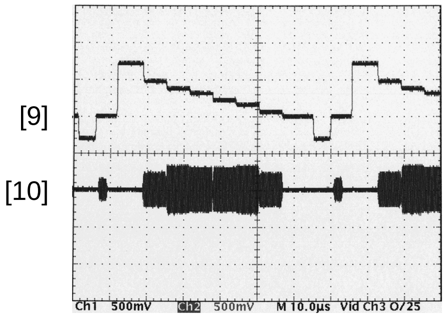
- IC400 [12]



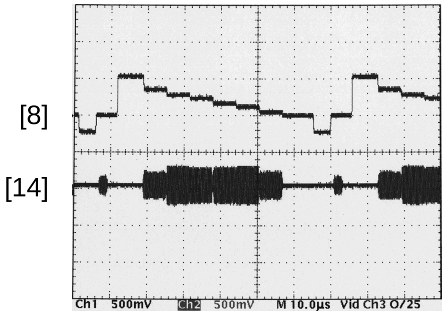
PAL

Video Input (AUX1, AUX2, IC400)
- 75 % color bars

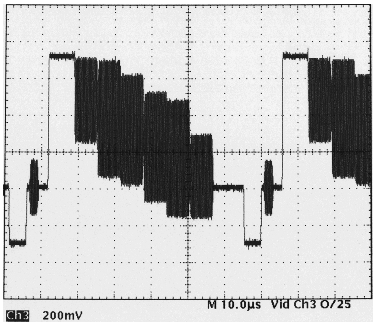
- CN400 [9, 10]



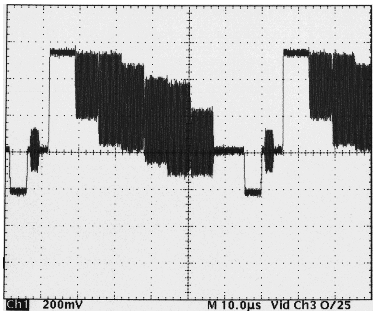
- IC400 [8, 14]



- CN401 [5]



- IC400 [12]

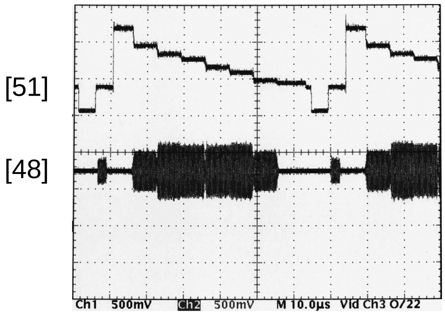


NTSC

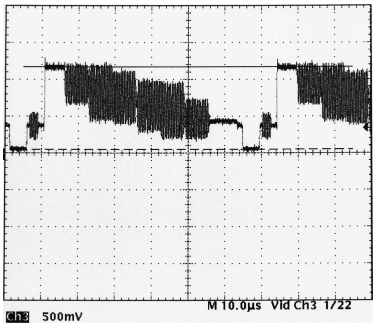
Video Input (IC450)

- 75 % color bars

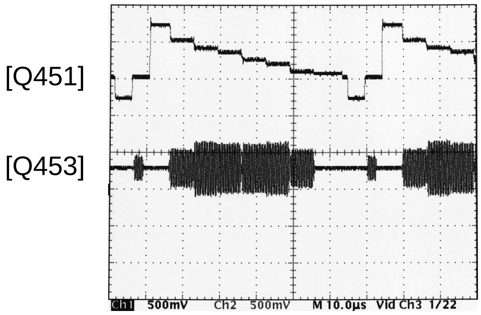
- IC450 [51, 48]



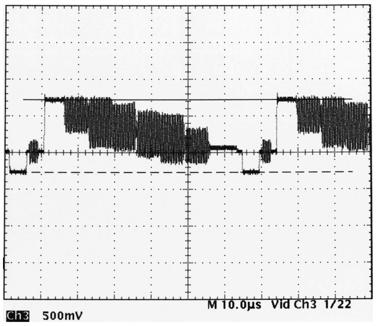
- IC450 [45]



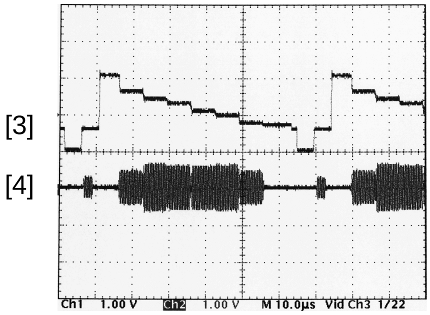
- Q451, Q453 [E]



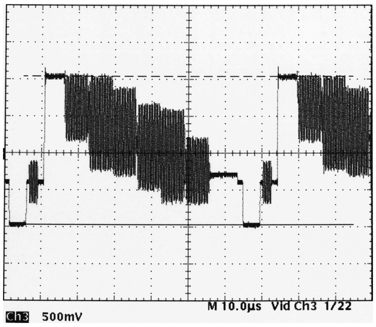
- Q455 [E]



- CN400 [3, 4]



- CN401 [6]

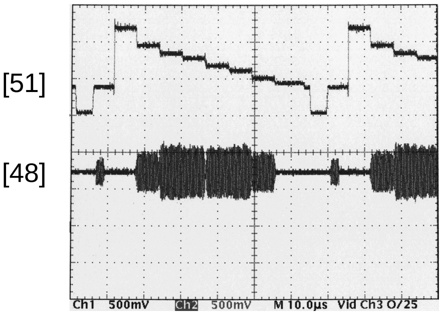


PAL

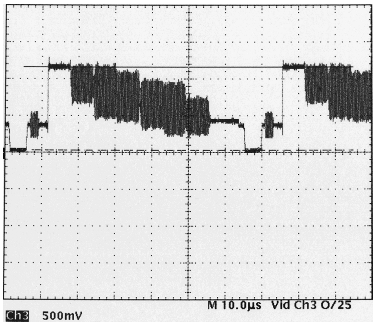
Video Output (IC450)

- 75 % color bars

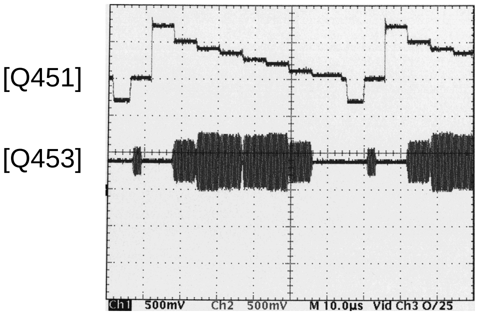
- IC450 [51, 48]



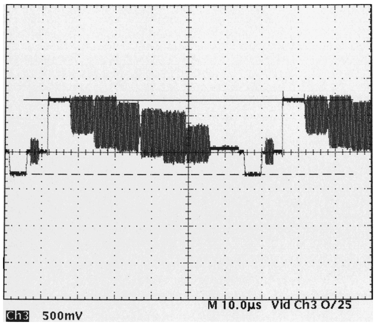
- IC450 [45]



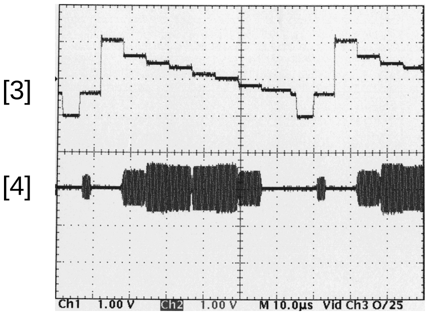
- Q451, Q453 [E]



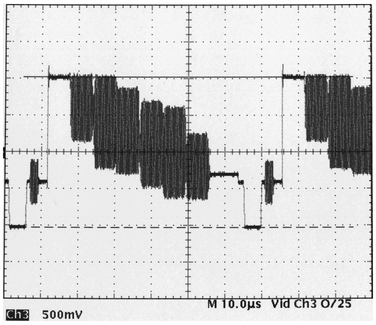
- Q455 [E]



- CN400 [3, 4]



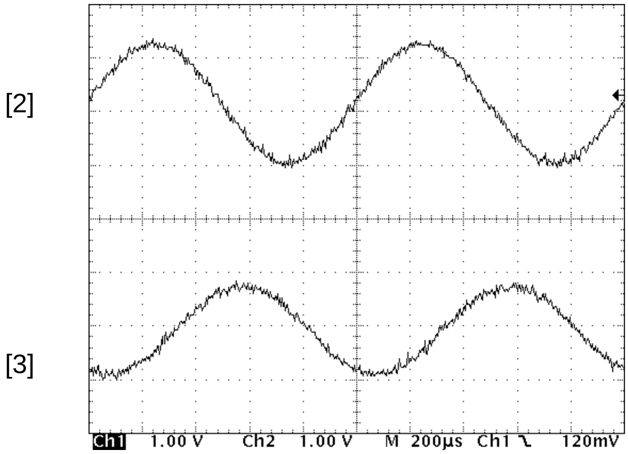
- CN401 [6]



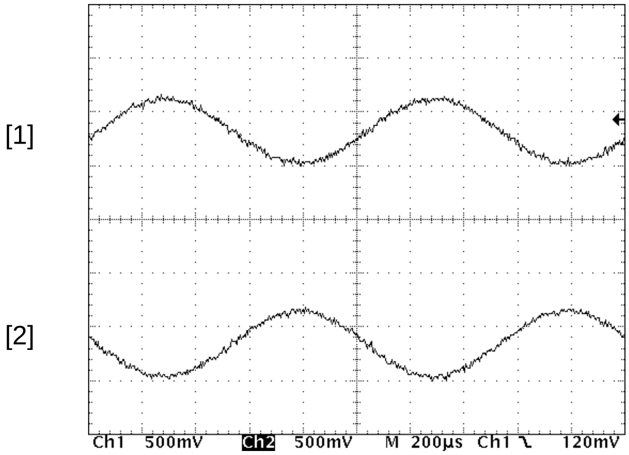
AUDIO

Input signal : CN401 [2] 1kHz, 0dB, Sine wave

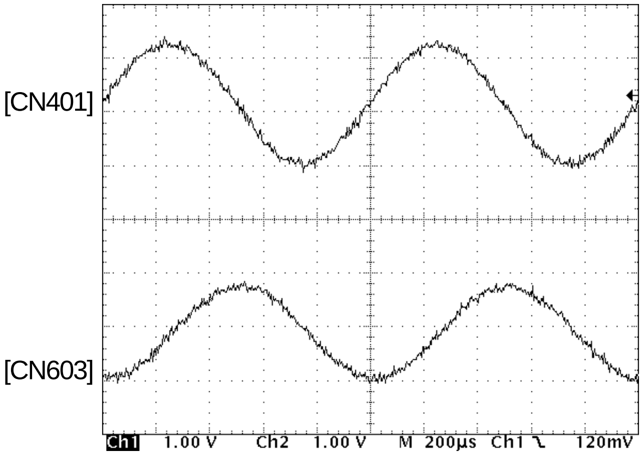
- CN401 [2, 3]



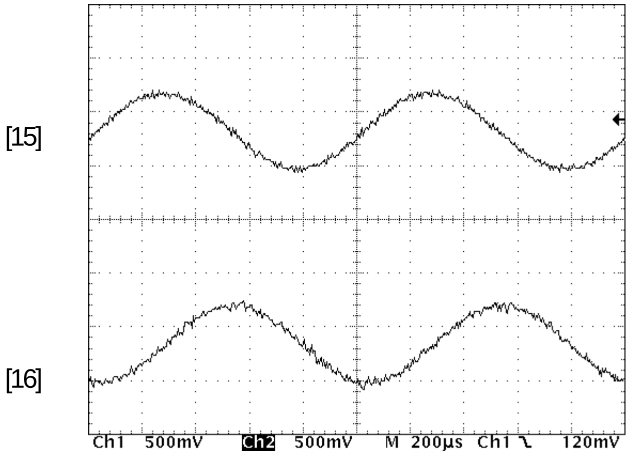
- CN602 [1, 2]



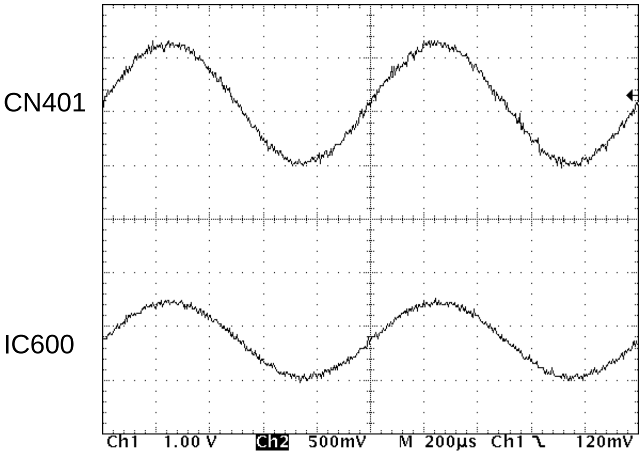
- CN401 [2], CN603 [1]



- IC600 [15,16]

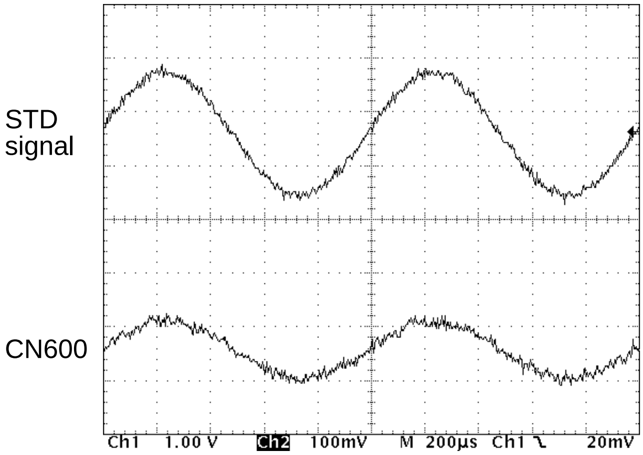


- CN401 [2], IC600 [2]

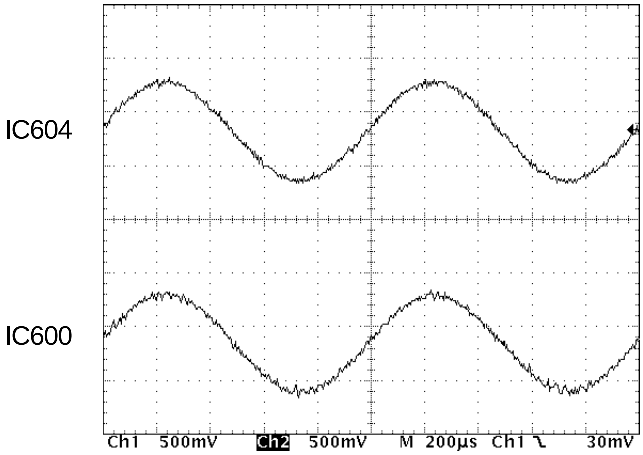


STD signal qenerator 100kΩ CN600 (1 or 4)

- STD signal, CN600 [1 or 4]

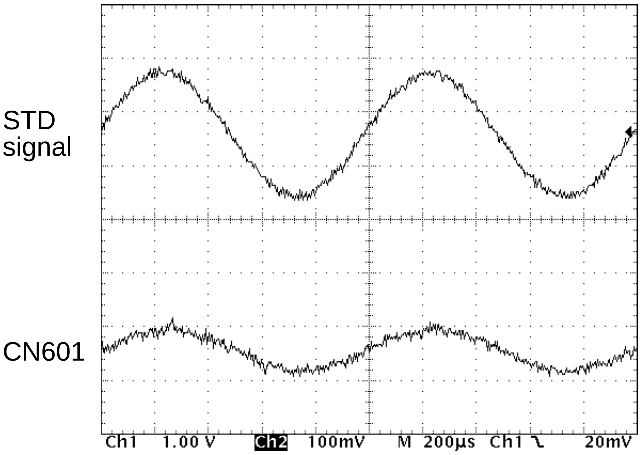


- IC604 [3], IC600 [3]

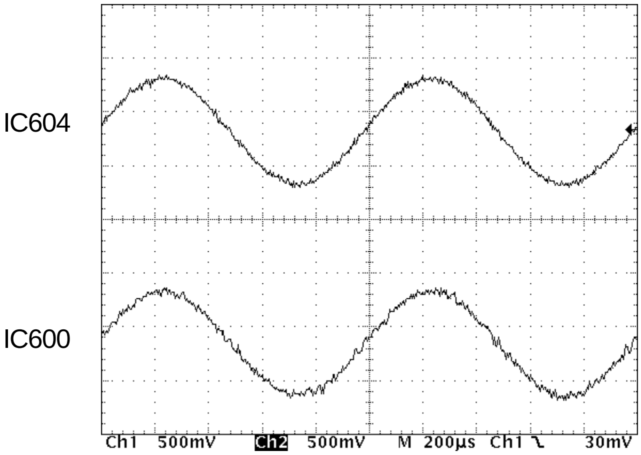


STD signal qenerator 390kΩ CN601 (2)

- STD signal, CN601 [2]



- IC604 [1], IC600 [3]



PCS-1600 (UC)
PCS-1600P (CE) E
9-955-262-11

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Communication System Solutions Network Company

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SONY®

COMPACT CONFERENCE PACKAGE

PCS-1600
PCS-1600P

COMPACT PROCESSOR

PCS-P160/P160P

REMOTE COMMANDER

PCS-R160

AC ADAPTOR

PCS-AC15

BRI BOARD

PCS-I160

V.35 BOARD

PCS-I161

SONY UPGRADE KIT

PCS-UC160/UC161

SERVICE MANUAL

Volume 2 1st Edition

MEMORY STICK TM

⚠警告

このマニュアルは，サービス専用です。
お客様が，このマニュアルに記載された設置や保守，点検，修理などを行うと感電や火災，人身事故につながることがあります。
危険をさけるため，サービストレーニングを受けた技術者のみご使用ください。

⚠WARNING

This manual is intended for qualified service personnel only.
To reduce the risk of electric shock, fire or injury, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

⚠WARNUNG

Die Anleitung ist nur für qualifiziertes Fachpersonal bestimmt.
Alle Wartungsarbeiten dürfen nur von qualifiziertem Fachpersonal ausgeführt werden. Um die Gefahr eines elektrischen Schlages, Feuergefahr und Verletzungen zu vermeiden, sind bei Wartungsarbeiten strikt die Angaben in der Anleitung zu befolgen. Andere als die angegeben Wartungsarbeiten dürfen nur von Personen ausgeführt werden, die eine spezielle Befähigung dazu besitzen.

⚠ AVERTISSEMENT

Ce manual est destiné uniquement aux personnes compétentes en charge de l’entretien. Afin de réduire les risques de décharge électrique, d’incendie ou de blessure n’effectuer que les réparations indiquées dans le mode d’emploi à moins d’être qualifié pour en effectuer d’autres. Pour toute réparation faire appel à une personne compétente uniquement.

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このマニュアルについて

本書の目的

本書は，コンパクトテレビ会議システムPCS-1600/1600Pのサービスマニュアルです。本書では，半導体一覧表，パーツリスト，分解図，マウント図，回路図に関する情報を記載しています。

関連マニュアル

本機には，この「サービスマニュアル Vol.2 (9-968-588-21)」のほかに，下記のマニュアルが用意されています。

- **取扱説明書（PCS-1600に付属）**
  部品番号： 3-205-055-01
  サービスマニュアル Vol.1の第1章 取扱説明にも記載されています。

- **サービスマニュアル Vol.1**
  部品番号：9-968-587-11
  部品の交換方法，回路の動作概説，トラブルシューティング，コマンドリストを記載しています。

- **“Semiconductor Pin Assignments”CD-ROM版（別途用意）**
  この“Semiconductor Pin Assignments” CD-ROM版は，B&Pシステムカンパニーの機器に使用されている半導体を検索することができます。
  このCD-ROMで検索できない半導体は，その半導体が使用されている機種のサービスマニュアルに記載されています。サービスマニュアルには，その機種に使用されているすべての半導体一覧とそのID番号を記載していますので，このCD-ROM版と合わせて使用してください。
  部品番号： 9-968-546-XX

構成

本書の構成を把握していただくために，全章の概略を以下に説明します。

Section 7　Semiconductor Pin Assignments
半導体標準図を記載しています。

Section 8　Spare Parts
分解図および部品リストを記載しています。

Section 9　Board Layouts
基板のマウント図を記載しています。

Section 10　Schematic Diagrams
回路図を記載しています。

Manual Structure

Purpose of this manual

This is the Service Manual for the Compact Conference Package PCS-1600/1600P. The manual contains servicing information regarding semiconductor pin assignments, parts list, exploded diagrams, board layouts and schematic diagrams.

Related manuals

In addition to this Service Manual Vol. 2 (9-968-588-21), the following manuals are provided.

- **Operation Manual (supplied with PCS-1600/1600P)**
  Part No.: 3-205-055-11, 3-205-055-21
  Part of the Operation Manual is included also in the Service Manual Vol.1, in Section 1, "Operating Instructions."

- **Service Manual Vol. 1**
  Part No.: 9-968-588-11
  Describes parts replacement, circuit operations, troubleshooting, and command list.

- **"Semiconductor Pin Assignments" CD-ROM (Available on request)**
  This "Semiconductor Pin Assignments" CD-ROM allows you to search for semiconductors used in Broadcasting & Professional Systems Company equipment.
  Semiconductors that cannot be searched for on this CD-ROM are listed in the service manual for the corresponding unit. The service manual contains a complete list of all semiconductors and their ID Nos., and thus should be used together with the CD-ROM.
  Part number: 9-968-546-XX

Contents

The following is a summary of all the sections for understanding the contents of this manual.

Section 7 Semiconductor Pin Assignments

This section describes the pin assignments of semiconductors.

Section 8 Spare Parts

This section describes the exploded views and detailed parts list.

Section 9 Board Layouts

This section describes the board layouts for this unit.

Section 10 Schematic Diagrams

This section describes the schematic diagrams of the boards.

Section 5
Semiconductor Pin Assignments

The following describes the semiconductor types used in this unit.

For semiconductors marked with page numbers in the index, refer to the corresponding pages in this section. However, in some cases incompatible types are also listed, therefore, when a part is to be replaced, also refer to the Spare Parts section.

In addition, for semiconductors with ID Nos., refer to the separate CD-ROM titled “Semiconductor Pin Assignments” (Sony Part No. 9-968-546-xx) that allows searching for parts by semiconductor type or ID No.

The semiconductors in the manual or on the CD-ROM are listed by equivalent types. Thus the external view or the index mark indication may differ from the actual type.

Pin assignments and block diagrams are based on the IC manufacturer’s data book.

本機に使用されている半導体型名の一覧を下記に示します。

索引中，ページが記載されている半導体は，本章の該当ページを参照してください。ただし，互換性のない型名を併記している場合がありますので，部品を交換するときは，Spare Partsの章を参照してください。

また，ID番号が記載されている半導体は，別途発行の“Semiconductor Pin Assignments” CD-ROM版（ソニー部品番号：9-968-546-xx）を参照してください。

半導体型名またはID番号から検索ができます。

マニュアルまたはCD-ROMに掲載されている半導体は，それぞれの機能を等価的に表わしたものです。

外観やインデックスマークの表示方法が実物と異なる場合があります。

ピン配置およびブロック図はICメーカーのデータブックに従いました。

DIODE	**Page or ID No.**
10E2N	DA001-01
1SS119	DA001-01
1SS119-25	DA001-01
1SS226	DC001-01
1SS123-T1	DC001-01
1SS352	DC008-02
1SS352-TPH3	DC008-02
DA204U	DC001-01
DA204UT106	DC001-01
DTZ12	DC008-04
DTZ-TT11-12	DC008-04
MA113-(TX)	DC008-01

LED	**Page or ID No.**
CL-150D-CD	LC001-01
CL-150D-CD-T	LC001-01
CL-150G-CD	LC001-01
CL-150G-CD-T	LC001-01
CL-150PG-CD	LC001-01
CL-150PG-CD-T	LC001-01
CL-150R-CD	LC001-01
CL-150R-CD-T	LC001-01
TLG263P	LR008-01
TLR224	LR053-01
LN25RP	LR053-01

TRANSISTOR	**Page or ID No.**
2SA1610-Y33	TC001-01
2SA1610-T1Y33	TC001-01
2SA1611-M5M6	TC001-01
2SA1611T1-M5M6	TC001-01
2SB1115A-YQ	TC002-01
2SB1115A-T1YQYP	TC002-01
2SC3356-(R25)	TC001-02
2SC3356-T1(R25)	TC001-02
2SC4173-B13	TC001-02
2SC4173-T1-B13	TC001-02
2SC4177-L6	TC001-02
2SC4177-T1L5L6	TC001-02
2SJ204-T1B	TC001-20
DTC144EUA-T106	TC001-03

Index

IC	Page or ID No.
74LCX00MTCX	TC74HC00P
74LCX00SJX	TC74HC00P
74LCX04MTCX	TC74HC04P
74LCX04SJX	TC74HC04P
74LCX08MTCX	TC74HC08P
74LCX08SJX	TC74HC08P
74LCX125SJX	MC74H125N
74LCX157MTCX	TC74HC157P
74LCX16240MTDX	74LCX16240MTDX
74LCX16244MTDX	IDT74FCT16244ATPV
74LCX16245MTDX	IDT74FCT16245ATPV-TR
74LCX16374MTDX	SN74ABT16374DL
74LCX16821MTDX	74LCX16821MTDX
74LCX240MTCX	TC74HC240P
74LCX244MTCX	TC74HC244P
74LCX244SJX	TC74HC244P
74LCX245MTCX	TC74HC245P
74LCX32MTCX	TC74HC32P
74LCX32SJX	TC74HC32P
74LCX540MTCX	MC74HC540N
74LCX540SJX	MC74HC540N
74LCX541MTCX	MC74HC541N
74LCX541SJX	MC74HC541N
74LCX574MTCX	TC74HC574P
74LCX574SJX	TC74HC574P
74LCX74MTCX	TC74HC74P
74LCX74SJX	TC74HC74P
74LCX821MTCX	V74ACT821
74LCX86MTCX	TC74HC86P
74LVXC4245QSCX	74LVX4245QSCX
74VHC244MTCX	TC74HC244P
74VHC574SJX	TC74HC574P
74VHCT04MTCX	TC74HC04P
74VHCT574AMTCX	TC74HC574P
AD8041AR	AD8041AR
AD8041AR-REEL	AD8041AR
AD9042AST	AD9042AST
AM29F040B-120JC	AM29F040-90JC
AM29F400BB-70EC	MBM29F400BA-12PF
ASLM040B	ASLM040B
AT27C010-45JC	IS27HC010-30PL
BT865AKRF	BT865AKRF
CDC586PAH	CDC586PAH
CLC505AJE	CLC505AJE
CLC505AJE-T	CLC505AJE
CXA1451M	CXA1451M
CXB1341R	CXB1341R
CXB1342R	CXB1342R
CXD2068AQ-1	CXD2068AQ-1
CXD2315Q	CXD2306Q
CXD8281Q	CXD8281Q
CXD8384Q	CXD8384Q
CXD8385Q	CXD8385Q
CXD8386AQ	CXD8386AQ
CXD8804Q	CXD8804Q
CXD8820AR	CXD8820AR
CXD8845Q	CXD8845Q
CY62256LL-70SNC-T2	CY62256-70SNC-T2
CY7C199-12VC	CY7C199-45PC
CY7C199-12VC-T2	CY7C199-45PC
DS1244Y	DS1244Y
DS90LV031ATMX	DS90LV031
DS90LV032ATMX	DS90LV032
EL2244CS	RC4558
EL2244CS-TE2	RC4558
EPC1PC8	EPC1PC8
EPF10K20TC144-3(04)	EPF10K20TC144-3
EPF10K20TC144-3	EPF10K20TC144-3
EPF10K30RC208-3(04)	EPF10K40RC208-3
EPF8452AQC160-4	EPF8452AQC160-4
EPM7032STC44-10	EPM7032VTC44-20
EPM7064SLC44-15	EPM7064SLC44-10(05)
EPM7064SLC44-10(05)	EPM7064SLC44-10(05)
EPM7064STC100-10	EPM7064STC100-10
EPM7128STC100-7	EPM7128STC100-7
EPM7128STC100-10	EPM7128STC100-7
EPM7128STC100-15	EPM7128STC100-7
EPM7192SQC160-10	EPM7192SQC160-15
EPM7192SQC160-15(05)	EPM7192SQC160-15
EPM7192SQC160-7	EPM7192SQC160-15
GF9102ACTM	GF9102ACTM
GF9105-CQQ	GF9105-CQQ
GL9P030	LR072-04
HD6417032F20	HD6417032F20
HN58C256AP-10	HN58C256P-20
HY57V161610DTC-7TR	HY57V161610DTC-7TR
IBM21S850PFD	IBM21S850PFD
IDT7005S25J	IDT7005S25J
IDT71024S12Y-TL	IDT71024S20Y-TL
IDT71024S15Y-TL	IDT71024S20Y-TL
IDT71256SA20Y	IDT71256SA20Y
IDT71321SA55J-TL	IDT71321SA55J-TL
IDT7164S20Y-TL	IDT7164S25Y
IDT71V124S15Y-TL	HM62W8127HJP-27
IDT71V256SA20Y	IDT71256L-35TP
IDT7200L35SO-TL	IDT7200L35SO-TL
IDT74FCT377ATSO	TC74HC377P
IP90C63	IP90C63
IP90C63A	IP90C63
KMM5328104CKG-6	KMM5328104CKG-6
LF2272QC20	LF2272QC20
LF48212QC-20	LF48212QC20
LM1881M	LM1881N
LM1881MX	LM1881N
LM317T	LM317T
LM35DM	LM35DM
LM3940IS-3.3	LM3940IS-3.3
LTC1337CS	LTC1337CS
LTC1337CSW	LTC1337CS
LTC491CS-E2	LTC491CS

IC	Page or ID No.
MACH111SP-15VC	MACH111SP-15VC
MAX202CSE-T	MAX202CSE
MAX660CSA-TG068	MAX660CSA
MB40C568HPF-ER	MB40C568HPF-ER
MB81164842A-100FN	MB81164842A-100FN
MB90091A-120	MB90091
MBM29F040C-90PD-SFK	AM29F040C-90JC
MBM29F400BC-70PFTN	MBM29F400BA-12PF
MBM29F400BC-70PFTN-AIT	MBM29F400BA-12PF
MBM29F800BA-90PFTN	MBM29F800BA-90PFTN
MBM29LV400BC-90PFTN	MBM29F400TC-90PFTN
MC68340PV16E	MC68340FE16C
MC68340PV16VE	MC68340FE16C
MC68340PV25	MC68340FE16C
MC74HC4051AFEL	MC74HC4051N
MC74HC4066F	CD4066AE
MC74HC4066FEL	CD4066AE
MN47V77ST1	MN47V77ST1
MX7828LCWI	MX7828LCWI
MX7828LCWI-T2	MX7828LCWI
NC7SZ126P5	NC7SZ126P5
NJM082M	RC4558
NJM360M	LM360N
NJM360M-TE2	LM360N
NJM4556AM-TE2	RC4558
PC16552DV	PC16552DV
PI49FCT3806AQ	PI49FCT3806AQ
REF-03GSR	REF-03GS
S-80821ANUP-EDJ-T2	S-8054HN-CB
S-81230SGUP-DQB-T1	S-81225AG-RH
SHC615AU	SHC615AU
SN65LVDS31DR	DS26C31CM
SN65LVDS32DR	DS26C32ACN
SN74ABT540NS-E05	MC74HC540N
SN74HC04ANS	TC74HC04P
SN74HC04ANSR	TC74HC04P
SN74HC05ANS	SN74HC05N
SN74HC05ANSR	SN74HC05N
SN74HC05APW-E05	SN74HC05N
SN74HC244ANS	TC74HC244P
SN74LVC138ANS-E05	TC74HC138P
SN74LVTH162244DGGR	IDT74FCT16244ATPV
SN74LVTH162374DGGR	SN74ABT16374DL
SN74LVTH16244ADLR	IDT74FCT16244ATPV
SN74LVTH16245ADGGR	IDT74FCT16245ATPV-TR
SN74LVTH244ANSR	TC74HC244P
SN74LVTH245ANS	TC74HC245P
SN74LVTH245ANS-E05	TC74HC245P
SN74S1053NS-E05	SN74S1053NS
SN75207BNS	SN75207BN
SN75207BNS-E05	SN75207BN
TC4W66F	TC4W66F
TC4W66F(TE12R)	TC4W66F
TC74ACT08F	TC74HC08P
TC74ACT08FT(EL)	TC74HC08P
TC74ACT299F	TC74HC299AF
TC74ACT541F	MC74HC541N
TC74HC05AF	SN74HC05N
TC74HC07AF	TC74HC07AF
TC74HC07AF(EL)	TC74HC07AF
TC74HC221AF	TC74HC221P
TC74HC221AF(EL)	TC74HC221P
TC74HC4053AFT(EL)	MC74HC4053F
TC74LCX04FT(EL)	TC74HC04P
TC74LCX244FT(EL)	TC74HC244P
TC74VHC02F	TC74HC02P
TC74VHC02F(EL)	TC74HC02P
TC74VHC04F	TC74HC04P
TC74VHC04F(EL)	TC74HC04P
TC74VHC04FT(EL)	TC74HC04P
TC74VHC08F(EL)	TC74HC08P
TC74VHC08FT(EL)	TC74HC08P
TC74VHC123AF(EL)	TC74HC123P
TC74VHC125F	MC74HC125N
TC74VHC125F(EL)	MC74HC125N
TC74VHC138F(EL)	TC74HC138P
TC74VHC139FT(EL)	TC74HC139P
TC74VHC14F	TC74HC14P
TC74VHC14F(EL)	TC74HC14P
TC74VHC14FT(EL)	TC74HC14P
TC74VHC157FT(EL)	TC74HC157P
TC74VHC163FT(EL)	TC74HC163P
TC74VHC175FT(EL)	TC74HC175P
TC74VHC221AFT(EL)	TC74HC221P
TC74VHC244F	TC74HC244P
TC74VHC244F(EL)	TC74HC244P
TC74VHC244FT(EL)	TC74HC244P
TC74VHC245F(EL)	TC74HC245P
TC74VHC245FT(EL)	TC74HC245P
TC74VHC299FT(EL)	TC74HC299AF
TC74VHC32F	TC74HC32P
TC74VHC32F(EL)	TC74HC32P
TC74VHC393F(EL)	TC74HC393P
TC74VHC541F	MC74HC541N
TC74VHC541F(EL)	MC74HC541N
TC74VHC541FT(EL)	MC74HC541N
TC74VHC574F	TC74HC574P
TC74VHC574FT(EL)	TC74HC574P
TC74VHC74F	TC74HC74P
TC74VHC74F(EL)	TC74HC74P
TC74VHC74FT(EL)	TC74HC74P
TC74VHC86FT(EL)	TC74HC86P
TC74VHCT00AF(EL)	TC74HC00P
TC74VHCT04AFT(EL)	TC74HC04P
TC74VHCT08AFT(EL)	TC74HC08P
TC74VHCT240AF(EL)	TC74HC240P
TC74VHCT244AF(EL)	TC74HC244P
TC74VHCT244AFT(EL)	TC74HC244P
TC74VHCT245AFT(EL)	TC74HC245P
TC74VHCT541AF(EL)	MC74HC541N
TC74VHCT541AFT(EL)	MC74HC541N
TC7S32FU(TE85R)	TC7S32F
TC7SH00FU-TE85R	TC7S00F
TC7SH02FU	TC4S01F
TC7SH02FU-TE85R	TC4S01F

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IC	Page or ID No.
TC7SH04FU	TC7S04F
TC7SH04FU-TE85R	TC7S04F
TC7SH08FU-TE85R	TC7S08F
TC7SH32FU-TE85R	TC7S32F
TC7SH86FU-TE85R	TC7S86FU
TE7751	TE7751
TL082CPS-E20	RC4558
TL16C552AFN	TL16C552AFN
TL7705ACPS	TL7705CP
TLC272CPWR	RC4558
TLC2932IPWR	TLC2932IPW
TMS320C31PQL60	TMS320C31PQL
TMS4C2973-26DTR	TMS4C2970-28DT
UPC358G2-E2	RC4558
UPD485505G-25	UPD485505G-25
UPD485506G5-25-7JF-E2	UPD485506G5-25-7JF
XPC860ZP50C1	XPC860ENZP50C1
XR-T3590ID-TR	XR-T3590ID-TR

Section 6
Spare Parts

6-1. Notes on Repair Parts

1. **Safety Related Components Warning**

   WARNING

   Components marked ⚠ are critical to safe operation. Therefore, specified parts should be used in the case of replacement.

2. **Standardization of Parts**

   Some repair parts supplied by Sony differ from those used for the unit. These are because of parts commonality and improvement.
   Parts list has the present standardized repair parts.

3. **Stock of Parts**

   Parts marked with “o” at SP (Supply Code) column of the spare parts list may not be stocked. Therefore, the delivery date will be delayed.

4. **Harness**

   Harnesses with no part number are not registered as spare parts.
   In need of repair, get components shown in the list and repair using them.

5. **Replacement of Optional Boards**

   If it is necessary to replace the following optional boards, please an order the PCS-I××× through the sales route.
   - IF-823 board : PCS-I160
   - IF-824 board : PCS-I161

6-1. 補修部品注意事項

1. **安全重要部品**

   ⚠警告

   ⚠印のついた部品は安全性を維持するために重要な部品です。したがって，交換する時は必ず指定の部品を使ってください。

2. **部品の共通化**

   ソニーから供給する補修用部品は，セットに使われているものと異なることがあります。
   これは部品の共通化，改良等によるものです。
   部品表には現時点での共通化された補修用部品が記載されています。

3. **部品の在庫**

   部品表のSP (Supply code) 欄に“o”で示される部品は在庫していないことがあり，納期が長くなることがあります。

4. **ハーネス**

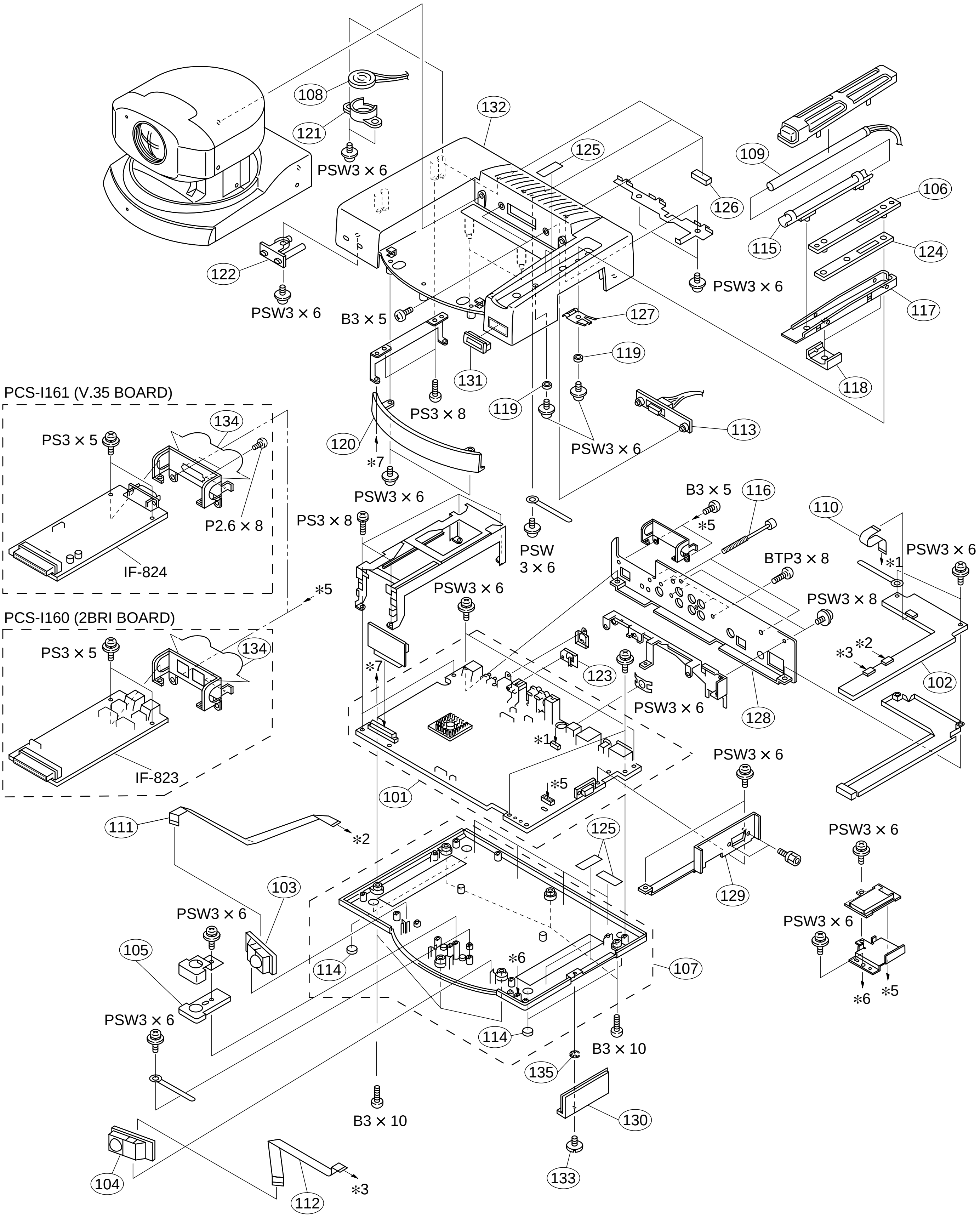
   部品番号が記載されていないハーネスは，サービス部品として登録されていません。
   これらは，リストに展開されているコンポーネント部品で補修してください。

5. **オプション基板の交換**

   下記のオプション基板の交換が必要な場合は，
   PCS-I×××を製品購入してください。
   - IF-823基板 : PCS-I160
   - IF-824基板 : PCS-I161

Exploded View of Processor

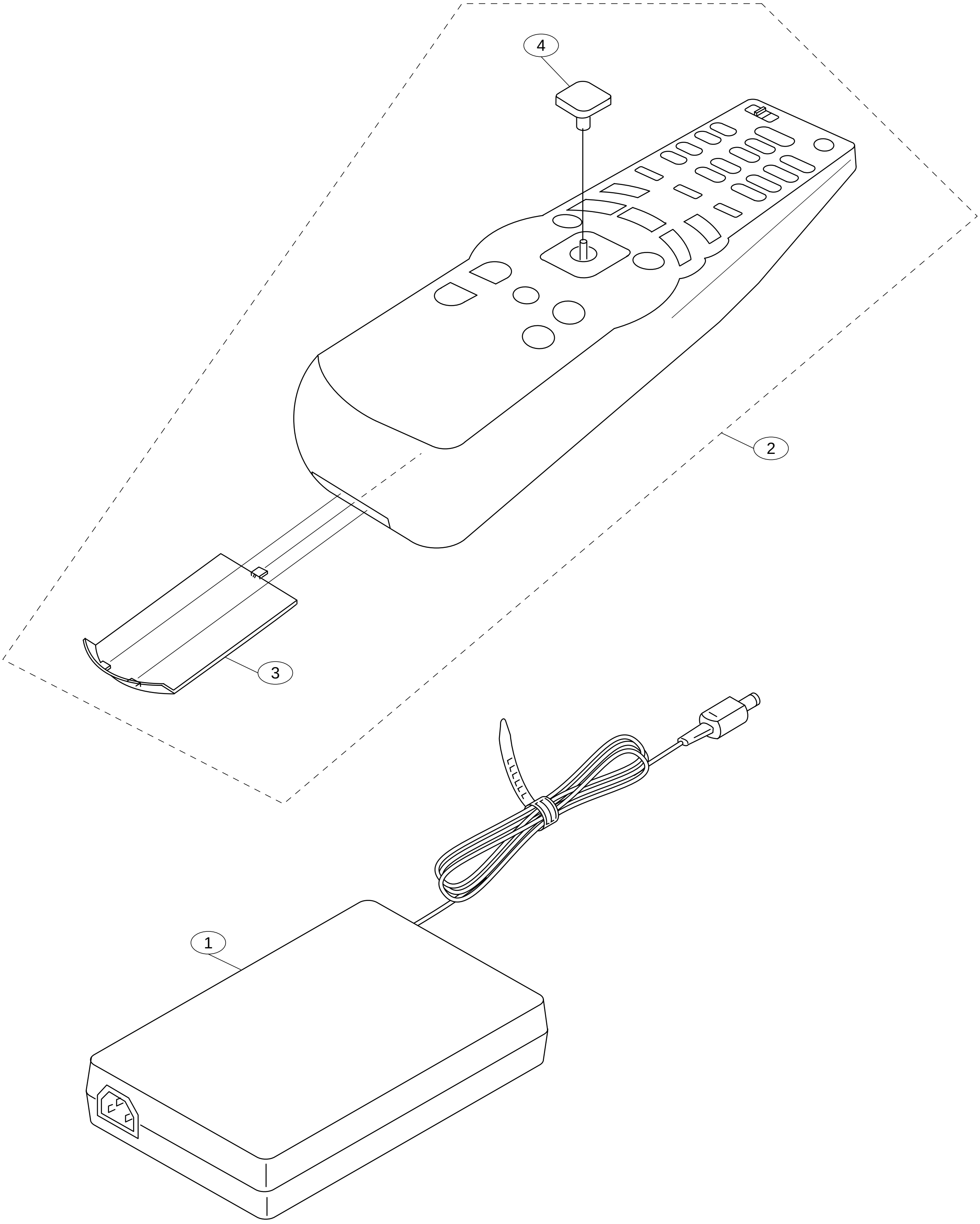
6-2. Exploded Views


108
121
PSW3 × 6
132
125
109
106
126
115
124
122
PSW3 × 6
PSW3 × 6
B3 × 5
127
117
119
131
118
PCS-I161 (V.35 BOARD)
134
PS3 × 5
PS3 × 8
119
113
120
∗7
PSW3 × 6
P2.6 × 8
IF-824
PSW3 × 6
PS3 × 8
B3 × 5
116
∗5
110
PSW 3 × 6
BTP3 × 8
PSW3 × 6
∗1
∗5
PCS-I160 (2BRI BOARD)
PSW3 × 6
PSW3 × 8
134
PS3 × 5
∗7
∗3
∗2
123
102
PSW3 × 6
128
∗1
IF-823
∗5
PSW3 × 6
101
111
∗2
125
PSW3 × 6
103
129
PSW3 × 6
PSW3 × 6
105
∗6
107
114
∗6
∗5
PSW3 × 6
114
B3 × 10
135
B3 × 10
130
133
104
112
∗3

Exploded View of Processor

No	Part No.	SP	Description
101	A-8327-091-A	o	MOUNTED CIRCUIT BOARD, MA-107(For J/UC)
	A-8327-092-A	o	MOUNTED CIRCUIT BOARD, MA-107P(For CE)
102	A-8327-095-A	o	MOUNTED CIRCUIT BOARD, DE-55
103	A-8327-096-A	o	MOUNTED CIRCUIT BOARD, IPM-92A
104	A-8327-097-A	o	MOUNTED CIRCUIT BOARD, IPM-93A
105	A-8327-098-A	o	MOUNTED CIRCUIT BOARD, RX-47A
106	X-3605-557-1	o	RETAINER ASSY, MIC BOX
107	X-3608-147-1	o	ASSY, LOWER CABINET
108	1-505-156-11	s	SPEAKER (2.0CM)
109	1-542-401-12	s	MICROPHONE
110	1-791-486-11	s	CABLE, FLAT (WITH SHIELD)
111	1-791-487-11	s	CABLE, FLAT (WITH SHIELD)
112	1-791-488-11	s	CABLE, FLAT (WITH SHIELD)
113	1-959-950-11	s	HARNESS, SUB (CAM)
114	3-615-361-01	s	FOOT, RUBBER(EU)
115	3-622-586-01	o	RETAINER,MIC
116	3-622-588-02	s	RETAINER SCREW,CAMERA
117	3-622-594-01	o	LOWER,MIC BOX
118	3-622-595-01	o	CUSHION,MIC BOX
119	3-622-596-01	o	CUSHION
120	3-622-599-01	o	WINDOW A,RAY
121	3-622-602-01	o	RETAINER,SPEAKER
122	3-622-603-01	o	GUIDE,LIGHT
123	3-622-609-01	o	SHIELD S
124	3-622-619-01	o	SHEET,RUBBER
125	3-622-855-01	o	GASKET
126	3-623-273-01	o	GASKET U
127	3-628-107-01	o	SPRING P,EARTH
128	3-631-383-01	o	PANEL,CONNECTOR
129	3-631-384-01	o	PANEL,CONNECTOR,SIDE
130	3-631-387-01	o	COVER
131	3-631-393-01	o	PLATE,ORNAMENTAL,MS
132	3-631-395-01	o	UPPER,CABINET
133	3-631-399-01	o	SCREW,ORNAMENTAL
134	3-631-489-01	o	HANDLE
135	3-669-596-01	s	WASHER (2.3), STOPPER

Exploded View of Remote Commander and AC Adaptor



No	Part No.	SP	Description
1	⚠ 1-418-560-11	s	ADAPTOR, AC
2	1-476-461-12	s	REMOTE COMMANDER (For CE/UC)
	1-476-461-22	s	REMOTE COMMANDER (For J)
3	3-709-603-01	s	COVER, BATTERY
4	3-709-604-01	s	KNOB, CURSOR

6-3. Electrical Parts List

CN-2143 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-679-860-11	o	PRINTED WIRING BOARD, CN-2143
CN501	1-774-998-21	o	CONNECTOR, BOARD TO BOARD 20P
CN502	1-793-111-21	s	CONNECTOR, MEMORY STICK

DE-55 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8327-095-A	o	MOUNTED CIRCUIT BOARD, DE-55
C101	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C102	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C103	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C104	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C105	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C108	1-162-927-11	s	CAPACITOR,CERAMIC 100PF/50V CH
C109	1-162-927-11	s	CAPACITOR,CERAMIC 100PF/50V CH
C110	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C121	1-162-927-11	s	CAPACITOR,CERAMIC 100PF/50V CH
C122	1-162-928-11	s	CAPACITOR,CERAMIC 120PF/50V CH
C123	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C124	1-117-681-11	s	CAPACITOR, ELECT 100MF/16V
C141	1-117-681-11	s	CAPACITOR, ELECT 100MF/16V
C142	1-162-918-11	s	CAPACITOR,CERAMIC 18PF/50V CH
C143	1-162-910-11	s	CAPACITOR,CERAMIC 5PF/50V 1608
C144	1-162-924-11	s	CAPACITOR,CERAMIC 56PF/50V CH
C145	1-162-918-11	s	CAPACITOR,CERAMIC 18PF/50V CH
C146	1-117-681-11	s	CAPACITOR, ELECT 100MF/16V
C147	1-117-681-11	s	CAPACITOR, ELECT 100MF/16V
C148	1-164-155-11	s	CAPACITOR,CERAMIC 75PF/50V CH
C149	1-162-908-11	s	CAPACITOR,CERAMIC 3PF/50V 1608
C150	1-117-681-11	s	CAPACITOR, ELECT 100MF/16V
C152	1-117-681-11	s	CAPACITOR, ELECT 100MF/16V
C153	1-162-908-11	s	CAPACITOR,CERAMIC 3PF/50V 1608
C154	1-117-681-11	s	CAPACITOR, ELECT 100MF/16V
C155	1-128-391-11	s	CAPACITOR,ELECT 330MF/6.3V
C156	1-128-391-11	s	CAPACITOR,ELECT 330MF/6.3V
C157	1-128-391-11	s	CAPACITOR,ELECT 330MF/6.3V
C161	1-162-927-11	s	CAPACITOR,CERAMIC 100PF/50V CH
C162	1-162-995-11	s	CAPACITOR,CERAMIC 0.022MF/50V
C163	1-162-968-11	s	CAPACITOR,CERAMIC 4700PF/50V B
C164	1-162-964-11	s	CAPACITOR,CERAMIC 1000PF/50V B
C165	1-126-396-11	s	CAPACITOR,ELECT 47MF/16V(CHIP)
C166	1-126-404-11	s	CAPACITOR,ELECT4.7MF/50V(CHIP)
C181	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C190	1-126-396-11	s	CAPACITOR,ELECT 47MF/16V(CHIP)
C191	1-126-396-11	s	CAPACITOR,ELECT 47MF/16V(CHIP)
C192	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C193	1-126-396-11	s	CAPACITOR,ELECT 47MF/16V(CHIP)
C194	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C195	1-126-396-11	s	CAPACITOR,ELECT 47MF/16V(CHIP)
C196	1-126-396-11	s	CAPACITOR,ELECT 47MF/16V(CHIP)
C197	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C199	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C301	1-126-396-11	s	CAPACITOR,ELECT 47MF/16V(CHIP)
C302	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C303	1-164-315-11	s	CAPACITOR,CERAMIC 470PF/50V CH
C304	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C305	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C306	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C309	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C310	1-128-403-11	s	CAPACITOR,ELECT 47MF/35V(CHIP)
C401	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C402	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C403	1-162-927-11	s	CAPACITOR,CERAMIC 100PF/50V CH
C404	1-164-315-11	s	CAPACITOR,CERAMIC 470PF/50V CH
C405	1-164-739-11	s	CAPACITOR CERAMIC 560PF (1608)

(DE-55 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C406	1-164-230-11	s	CAPACITOR,CERAMIC 220PF/50V
C407	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C408	1-162-920-11	s	CAPACITOR,CERAMIC 27PF/50V CH
C409	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C421	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C422	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C423	1-162-927-11	s	CAPACITOR,CERAMIC 100PF/50V CH
C424	1-164-315-11	s	CAPACITOR,CERAMIC 470PF/50V CH
C425	1-164-739-11	s	CAPACITOR CERAMIC 560PF (1608)
C426	1-164-230-11	s	CAPACITOR,CERAMIC 220PF/50V
C427	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C428	1-162-920-11	s	CAPACITOR,CERAMIC 27PF/50V CH
C429	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C490	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C491	1-126-396-11	s	CAPACITOR,ELECT 47MF/16V(CHIP)
C492	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C493	1-126-396-11	s	CAPACITOR,ELECT 47MF/16V(CHIP)
C494	1-128-989-11	s	CAPACITOR,POLYPYRROLE 220MF
C495	1-128-989-11	s	CAPACITOR,POLYPYRROLE 220MF
C501	1-128-405-11	s	CAPACITOR.ELECT 22MF/50V(CHIP)
C996	1-126-396-11	s	CAPACITOR,ELECT 47MF/16V(CHIP)
C997	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
CN101	1-750-965-11	o	CONNECTOR, FPC (8P)
CN402	1-764-436-21	s	CONNECTOR, FPC (6P)
CN403	1-764-436-21	s	CONNECTOR, FPC (6P)
D161	8-719-801-78	s	DIODE 1SS184
D301	8-719-800-76	s	DIODE 1SS226
D302	8-719-800-76	s	DIODE 1SS226
D901	8-719-158-19	s	DIODE RD6.2SB
IC101	8-759-011-99	s	IC MC10H115M
IC121	8-759-422-56	s	IC MC10H107MEL
IC141	8-759-598-52	s	IC TK15403MTL
IC142	8-759-598-52	s	IC TK15403MTL
IC301	8-759-008-79	s	IC MC14011BF
L141	1-410-387-11	s	INDUCTOR,CHIP 33UH (3225)
L142	1-410-387-11	s	INDUCTOR,CHIP 33UH (3225)
L192	1-408-785-21	s	CHIP INDUCTOR 47UH (4532)
L193	1-408-785-21	s	CHIP INDUCTOR 47UH (4532)
L194	1-408-785-21	s	CHIP INDUCTOR 47UH (4532)
L301	1-408-785-21	s	CHIP INDUCTOR 47UH (4532)
L302	1-408-785-21	s	CHIP INDUCTOR 47UH (4532)
L401	1-410-380-31	s	INDUCTOR,CHIP 8.2UH (3225)
L402	1-410-374-11	s	INDUCTOR,CHIP 2.7UH (3225)
L403	1-410-374-11	s	INDUCTOR,CHIP 2.7UH (3225)
L404	1-410-384-31	s	INDUCTOR,CHIP 18UH (3225)
L421	1-410-380-31	s	INDUCTOR,CHIP 8.2UH (3225)
L422	1-410-374-11	s	INDUCTOR,CHIP 2.7UH (3225)
L423	1-410-374-11	s	INDUCTOR,CHIP 2.7UH (3225)
L424	1-410-384-31	s	INDUCTOR,CHIP 18UH (3225)
L491	1-410-383-31	s	INDUCTOR,CHIP 15UH (3225)
L492	1-410-383-31	s	INDUCTOR,CHIP 15UH (3225)
Q110	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q140	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q161	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q162	8-729-216-22	s	TRANSISTOR 2SA1162-G
Q163	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q164	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6

(DE-55 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q181	8-729-106-60	s	TRANSISTOR 2SB1115A
Q401	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q402	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q403	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q404	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q405	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q421	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q422	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q423	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q424	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q425	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q901	8-729-106-68	s	TRANSISTOR 2SD1615A-GP
Q902	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
R101	1-216-808-11	s	RESISTOR,CHIP 82 1/16W 1608
R102	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R103	1-216-826-11	s	RESISTOR,CHIP 2.7K 1/16W(1608)
R104	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R105	1-216-804-11	s	RESISTOR,CHIP 39 1/16W 1608
R106	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R107	1-216-826-11	s	RESISTOR,CHIP 2.7K 1/16W(1608)
R108	1-216-821-11	s	RESISTOR,CHIP 1.0K 1/16W(1608)
R109	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R110	1-216-830-11	s	RESISTOR,CHIP 5.6K 1/16W 1608
R111	1-216-826-11	s	RESISTOR,CHIP 2.7K 1/16W(1608)
R112	1-216-818-11	s	RESISTOR, CHIP 560 1/16W 1608
R121	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R122	1-216-806-11	s	RESISTOR,CHIP 56 1/16W 1608
R123	1-216-804-11	s	RESISTOR,CHIP 39 1/16W 1608
R124	1-216-811-11	s	RESISTOR, CHIP 150 1/16W(1608)
R125	1-216-812-11	s	RESISTOR,CHIP 180 1/16W 1608
R141	1-216-831-11	s	RESISTOR,CHIP 6.8K 1/16W(1608)
R142	1-216-825-11	s	RESISTOR,CHIP 2.2K 1/16W 1608
R143	1-216-821-11	s	RESISTOR,CHIP 1.0K 1/16W(1608)
R144	1-216-812-11	s	RESISTOR,CHIP 180 1/16W 1608
R145	1-216-826-11	s	RESISTOR,CHIP 2.7K 1/16W(1608)
R148	1-218-871-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R149	1-218-857-11	s	RESISTOR,CHIP 2.7K 1/16W(1608)
R150	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R151	1-216-827-11	s	RESISTOR, CHIP 3.3K 1/16W 1608
R152	1-218-865-11	s	RESISTOR,CHIP 5.6K 1/16W(1608)
R153	1-218-859-11	s	RESISTOR,CHIP 3.3K 1/16W(1608)
R154	1-218-865-11	s	RESISTOR,CHIP 5.6K 1/16W(1608)
R155	1-218-865-11	s	RESISTOR,CHIP 5.6K 1/16W(1608)
R156	1-218-285-11	s	RESISTOR,CHIP 75 1/16W (1608)
R157	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R161	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R162	1-216-814-11	s	RESISTOR,CHIP 270 1/16W 1608
R163	1-216-813-11	s	RESISTOR, CHIP 220 1/16W 1608
R164	1-216-823-11	s	RESISTOR, CHIP 1.5K 1/16W
R165	1-216-857-11	s	RESISTOR,CHIP 1M 1/16W(1608)
R166	1-216-826-11	s	RESISTOR,CHIP 2.7K 1/16W(1608)
R167	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R168	1-216-831-11	s	RESISTOR,CHIP 6.8K 1/16W(1608)
R169	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R170	1-216-831-11	s	RESISTOR,CHIP 6.8K 1/16W(1608)
R171	1-216-821-11	s	RESISTOR,CHIP 1.0K 1/16W(1608)
R172	1-216-827-11	s	RESISTOR, CHIP 3.3K 1/16W 1608
R173	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)

(DE-55 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R174	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R176	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R181	1-216-824-11	s	RESISTOR, CHIP 1.8K 1/16W 1608
R182	1-216-824-11	s	RESISTOR, CHIP 1.8K 1/16W 1608
R301	1-216-838-11	s	RESISTOR CHIP 27K 1/16W(1608)
R302	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R303	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R304	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R401	1-216-831-11	s	RESISTOR,CHIP 6.8K 1/16W(1608)
R402	1-216-826-11	s	RESISTOR,CHIP 2.7K 1/16W(1608)
R403	1-216-819-11	s	RESISTOR,CHIP 680 1/16W 1608
R404	1-216-813-11	s	RESISTOR, CHIP 220 1/16W 1608
R405	1-216-816-11	s	RESISTOR, CHIP 390 1/16W 1608
R406	1-216-815-11	s	RESISTOR,CHIP 330 1/16W 1608
R407	1-216-815-11	s	RESISTOR,CHIP 330 1/16W 1608
R408	1-216-836-11	s	RESISTOR, CHIP 18K 1/16W 1608
R409	1-216-834-11	s	RESISTOR,CHIP 12K 1/16W 1608
R410	1-216-819-11	s	RESISTOR,CHIP 680 1/16W 1608
R411	1-216-820-11	s	RESISTOR, CHIP 820 1/16W 1608
R412	1-216-813-11	s	RESISTOR, CHIP 220 1/16W 1608
R413	1-216-813-11	s	RESISTOR, CHIP 220 1/16W 1608
R414	1-216-819-11	s	RESISTOR,CHIP 680 1/16W 1608
R415	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R416	1-216-813-11	s	RESISTOR, CHIP 220 1/16W 1608
R421	1-216-831-11	s	RESISTOR,CHIP 6.8K 1/16W(1608)
R422	1-216-826-11	s	RESISTOR,CHIP 2.7K 1/16W(1608)
R423	1-216-819-11	s	RESISTOR,CHIP 680 1/16W 1608
R424	1-216-813-11	s	RESISTOR, CHIP 220 1/16W 1608
R425	1-216-816-11	s	RESISTOR, CHIP 390 1/16W 1608
R426	1-216-815-11	s	RESISTOR,CHIP 330 1/16W 1608
R427	1-216-815-11	s	RESISTOR,CHIP 330 1/16W 1608
R428	1-216-836-11	s	RESISTOR, CHIP 18K 1/16W 1608
R429	1-216-834-11	s	RESISTOR,CHIP 12K 1/16W 1608
R430	1-216-819-11	s	RESISTOR,CHIP 680 1/16W 1608
R431	1-216-820-11	s	RESISTOR, CHIP 820 1/16W 1608
R432	1-216-813-11	s	RESISTOR, CHIP 220 1/16W 1608
R433	1-216-813-11	s	RESISTOR, CHIP 220 1/16W 1608
R434	1-216-819-11	s	RESISTOR,CHIP 680 1/16W 1608
R435	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R436	1-216-813-11	s	RESISTOR, CHIP 220 1/16W 1608
R453	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R501	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R502	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R503	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R901	1-218-835-11	s	RESISTOR,CHIP 330 1/16W (1608)
R902	1-211-977-11	s	RESISTOR,CHIP 22 1/16W (1608)
R903	1-218-851-11	s	RESISTOR,CHIP 1.5K 1/16W(1608)
R905	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R906	1-218-831-11	s	RESISTOR, CHIP 220 1/16W(1608)

EX-816 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-679-859-11	o	PRINTED WIRING BOARD, EX-816
CN601	1-573-783-21	o	CONNECTOR, PC BOARD 60P
CN602	1-750-874-21	s	CONNECTOR, PC BOARD (PLUG) 60P

IF-823 BOARD (PCS-I160)

Ref. No. or Q'ty	Part No.	SP	Description
C100	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C101	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C102	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C103	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C104	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C105	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C106	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C107	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C109	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C112	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C113	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C114	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C115	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C120	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C121	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C122	1-115-170-11	s	CAPACITOR,TANTAL(SMD)4.7MF/10V
C200	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C201	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C202	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C203	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C204	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C205	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C206	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C207	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C209	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C212	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C213	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C214	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C215	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C220	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C221	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C222	1-115-170-11	s	CAPACITOR,TANTAL(SMD)4.7MF/10V
C300	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C301	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C304	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C306	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C311	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C312	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C313	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
CN100	1-793-458-11	s	JACK, MODULAR (8 CORE)
CN200	1-793-458-11	s	JACK, MODULAR (8 CORE)
CN300	1-573-783-21	o	CONNECTOR, PC BOARD 60P
COR100	1-564-952-21	s	PIN,CONNECTOR
COR200	1-564-952-21	s	PIN,CONNECTOR
D100	8-719-800-76	s	DIODE 1SS226
D101	8-719-800-76	s	DIODE 1SS226
D102	8-719-800-76	s	DIODE 1SS226
D103	8-719-800-76	s	DIODE 1SS226
D104	8-719-800-76	s	DIODE 1SS226
D105	8-719-800-76	s	DIODE 1SS226
D106	8-719-800-76	s	DIODE 1SS226
D107	8-719-800-76	s	DIODE 1SS226
D108	8-719-800-76	s	DIODE 1SS226
D109	8-719-800-76	s	DIODE 1SS226
D110	8-719-800-76	s	DIODE 1SS226
D111	8-719-800-76	s	DIODE 1SS226
D200	8-719-800-76	s	DIODE 1SS226
D201	8-719-800-76	s	DIODE 1SS226

(IF-823 BOARD (PCS-I160))

Ref. No. or Q'ty	Part No.	SP	Description
D202	8-719-800-76	s	DIODE 1SS226
D203	8-719-800-76	s	DIODE 1SS226
D204	8-719-800-76	s	DIODE 1SS226
D205	8-719-800-76	s	DIODE 1SS226
D206	8-719-800-76	s	DIODE 1SS226
D207	8-719-800-76	s	DIODE 1SS226
D208	8-719-800-76	s	DIODE 1SS226
D209	8-719-800-76	s	DIODE 1SS226
D210	8-719-800-76	s	DIODE 1SS226
D211	8-719-800-76	s	DIODE 1SS226
E100	1-535-757-11	s	CHIP, CHECKER (CONNECTOR)
E200	1-535-757-11	s	CHIP, CHECKER (CONNECTOR)
FL100 ⚠	1-239-773-11	s	FILTER, EMI CHOKE
FL200 ⚠	1-239-773-11	s	FILTER, EMI CHOKE
IC100	8-759-396-70	s	IC HD81504RFE
IC101	8-759-532-02	s	IC CY62256LL-70ZC-T2
IC102	8-759-532-02	s	IC CY62256LL-70ZC-T2
IC103	8-759-491-47	s	IC TC74VHCT08FT (EL)
IC104	8-759-491-48	s	IC TC74VHCT138AFT(EL)
IC105	8-759-491-55	s	IC TC74VHCT74AFT(EL)
IC106	8-759-491-53	s	IC TC74VHCT374AFT (EL)
IC107	8-759-491-53	s	IC TC74VHCT374AFT (EL)
IC109	8-759-491-51	s	IC TC74VHCT245AFT(EL)
IC200	8-759-396-70	s	IC HD81504RFE
IC201	8-759-532-02	s	IC CY62256LL-70ZC-T2
IC202	8-759-532-02	s	IC CY62256LL-70ZC-T2
IC203	8-759-491-47	s	IC TC74VHCT08FT (EL)
IC204	8-759-491-48	s	IC TC74VHCT138AFT(EL)
IC205	8-759-491-55	s	IC TC74VHCT74AFT(EL)
IC206	8-759-491-53	s	IC TC74VHCT374AFT (EL)
IC207	8-759-491-53	s	IC TC74VHCT374AFT (EL)
IC209	8-759-491-51	s	IC TC74VHCT245AFT(EL)
IC300	8-759-491-50	s	IC TC74VHCT244AFT(EL)
IC301	8-759-491-50	s	IC TC74VHCT244AFT(EL)
IC304	8-759-491-51	s	IC TC74VHCT245AFT(EL)
IC306	8-759-196-96	s	IC TC7SH08FU (TE85R)
IC311	8-759-491-50	s	IC TC74VHCT244AFT(EL)
IC312	8-759-598-30	o	IC MACH111SP-15VC-RAP00V1
L100	1-412-951-11	s	INDUCTOR 10UH (2520)
L200	1-412-951-11	s	INDUCTOR 10UH (2520)
R100	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R101	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R102	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R103	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R104	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R105	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R106	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R108	1-211-969-11	s	RESISTOR,CHIP 10 1/16W (1608)
R109	1-211-978-11	s	RESISTOR,CHIP 24 1/16W (1608)
R110	1-211-969-11	s	RESISTOR,CHIP 10 1/16W (1608)
R111	1-211-978-11	s	RESISTOR,CHIP 24 1/16W (1608)
R112	1-218-854-11	s	RESISTOR,CHIP 2K 1/16W (1608)
R113	1-218-854-11	s	RESISTOR,CHIP 2K 1/16W (1608)
R115	1-216-805-11	s	RESISTOR,CHIP 47 1/16W 1608
R116	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R117	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R118	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)

(IF-823 BOARD (PCS-I160))

Ref. No. or Q’ty	Part No.	SP	Description
R119	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R121	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R122	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R200	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R201	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R202	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R203	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R204	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R205	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R206	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R208	1-211-969-11	s	RESISTOR,CHIP 10 1/16W (1608)
R209	1-211-978-11	s	RESISTOR,CHIP 24 1/16W (1608)
R210	1-211-969-11	s	RESISTOR,CHIP 10 1/16W (1608)
R211	1-211-978-11	s	RESISTOR,CHIP 24 1/16W (1608)
R212	1-218-854-11	s	RESISTOR,CHIP 2K 1/16W (1608)
R213	1-218-854-11	s	RESISTOR,CHIP 2K 1/16W (1608)
R215	1-216-805-11	s	RESISTOR,CHIP 47 1/16W 1608
R216	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R217	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R218	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R219	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R221	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R222	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R300	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R301	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R302	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
RB100	1-236-907-11	s	RESISTOR BLOCK 100K (1608)
RB101	1-236-907-11	s	RESISTOR BLOCK 100K (1608)
RB102	1-236-907-11	s	RESISTOR BLOCK 100K (1608)
RB103	1-236-907-11	s	RESISTOR BLOCK 100K (1608)
RB104	1-236-907-11	s	RESISTOR BLOCK 100K (1608)
RB105	1-236-907-11	s	RESISTOR BLOCK 100K (1608)
RB106	1-236-907-11	s	RESISTOR BLOCK 100K (1608)
RB107	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB108	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB109	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB110	1-236-907-11	s	RESISTOR BLOCK 100K (1608)
RB200	1-236-907-11	s	RESISTOR BLOCK 100K (1608)
RB201	1-236-907-11	s	RESISTOR BLOCK 100K (1608)
RB202	1-236-907-11	s	RESISTOR BLOCK 100K (1608)
RB203	1-236-907-11	s	RESISTOR BLOCK 100K (1608)
RB204	1-236-907-11	s	RESISTOR BLOCK 100K (1608)
RB205	1-236-907-11	s	RESISTOR BLOCK 100K (1608)
RB206	1-236-907-11	s	RESISTOR BLOCK 100K (1608)
RB207	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB208	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB209	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB210	1-236-907-11	s	RESISTOR BLOCK 100K (1608)
RB300	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB301	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
T100	⚠ 1-435-820-11	s	TRANSFORMER, INPUT/OUTPUT
T200	⚠ 1-435-820-11	s	TRANSFORMER, INPUT/OUTPUT

IF-824 BOARD (PCS-I161)

Ref. No. or Q’ty	Part No.	SP	Description
C100	1-135-347-11	s	CAP, SOLID ELECT 82MF
C101	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C102	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C103	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C104	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C105	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C106	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C110	1-135-347-11	s	CAP, SOLID ELECT 82MF
C111	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C115	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C200	1-109-982-11	s	CAPACITOR,CHIP CERAMIC 1MF/10V
C204	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C205	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C206	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C210	1-126-394-11	s	CAPACITOR,ELECT 10MF/16V(CHIP)
C211	1-126-394-11	s	CAPACITOR,ELECT 10MF/16V(CHIP)
C212	1-126-394-11	s	CAPACITOR,ELECT 10MF/16V(CHIP)
C213	1-126-394-11	s	CAPACITOR,ELECT 10MF/16V(CHIP)
C214	1-126-394-11	s	CAPACITOR,ELECT 10MF/16V(CHIP)
C215	1-126-394-11	s	CAPACITOR,ELECT 10MF/16V(CHIP)
C216	1-126-394-11	s	CAPACITOR,ELECT 10MF/16V(CHIP)
C217	1-126-394-11	s	CAPACITOR,ELECT 10MF/16V(CHIP)
C218	1-126-394-11	s	CAPACITOR,ELECT 10MF/16V(CHIP)
C219	1-126-394-11	s	CAPACITOR,ELECT 10MF/16V(CHIP)
C220	1-126-394-11	s	CAPACITOR,ELECT 10MF/16V(CHIP)
C221	1-126-394-11	s	CAPACITOR,ELECT 10MF/16V(CHIP)
C222	1-126-394-11	s	CAPACITOR,ELECT 10MF/16V(CHIP)
C223	1-126-394-11	s	CAPACITOR,ELECT 10MF/16V(CHIP)
C224	1-126-394-11	s	CAPACITOR,ELECT 10MF/16V(CHIP)
C225	1-126-394-11	s	CAPACITOR,ELECT 10MF/16V(CHIP)
C226	1-126-394-11	s	CAPACITOR,ELECT 10MF/16V(CHIP)
C227	1-126-394-11	s	CAPACITOR,ELECT 10MF/16V(CHIP)
C228	1-126-394-11	s	CAPACITOR,ELECT 10MF/16V(CHIP)
C229	1-126-394-11	s	CAPACITOR,ELECT 10MF/16V(CHIP)
CN100	1-573-783-21	o	CONNECTOR, PC BOARD 60P
CN200	1-774-138-11	s	SOCKET, CONNECTOR 36P
FL200	1-239-825-11	s	FILTER, CHIP EMI
FL201	1-239-825-11	s	FILTER, CHIP EMI
FL202	1-239-825-11	s	FILTER, CHIP EMI
FL203	1-239-825-11	s	FILTER, CHIP EMI
FL204	1-239-825-11	s	FILTER, CHIP EMI
FL205	1-239-825-11	s	FILTER, CHIP EMI
FL206	1-239-825-11	s	FILTER, CHIP EMI
FL207	1-239-825-11	s	FILTER, CHIP EMI
FL208	1-239-825-11	s	FILTER, CHIP EMI
FL209	1-239-825-11	s	FILTER, CHIP EMI
FL210	1-239-825-11	s	FILTER, CHIP EMI
FL211	1-239-825-11	s	FILTER, CHIP EMI
FL212	1-239-825-11	s	FILTER, CHIP EMI
FL213	1-239-825-11	s	FILTER, CHIP EMI
FL214	1-239-825-11	s	FILTER, CHIP EMI
FL215	1-239-825-11	s	FILTER, CHIP EMI
FL216	1-239-825-11	s	FILTER, CHIP EMI
FL217	1-239-825-11	s	FILTER, CHIP EMI
FL218	1-239-825-11	s	FILTER, CHIP EMI
FL219	1-239-825-11	s	FILTER, CHIP EMI
FL220	1-239-825-11	s	FILTER, CHIP EMI
FL221	1-239-825-11	s	FILTER, CHIP EMI

(IF-824 BOARD (PCS-I161))

Ref. No. or Q'ty	Part No.	SP	Description
FL222	1-239-825-11	s	FILTER, CHIP EMI
FL223	1-239-825-11	s	FILTER, CHIP EMI
IC100	8-759-637-71	s	IC MAX660CSA-TG068
IC101	8-759-483-63	s	IC XR-T3590ID
IC102	8-759-491-50	s	IC TC74VHCT244AFT(EL)
IC103	8-759-491-50	s	IC TC74VHCT244AFT(EL)
IC104	8-759-491-51	s	IC TC74VHCT245AFT(EL)
IC105	8-759-598-31	o	IC MACH111SP-15VC-RAP01V1
IC200	8-759-252-59	s	IC MAX202CSE
IC201	8-759-252-59	s	IC MAX202CSE
IC202	8-759-252-59	s	IC MAX202CSE
IC203	8-759-252-59	s	IC MAX202CSE
IC204	8-759-523-84	s	IC TC74VHC14FT (EL)
IC205	8-759-058-64	s	IC TC7S32FU-TE85R
IC206	8-759-491-55	s	IC TC74VHCT74AFT(EL)
R100	1-218-825-11	s	RESISTOR,CHIP 120 1/16W (1608)
R101	1-218-825-11	s	RESISTOR,CHIP 120 1/16W (1608)
R102	1-218-825-11	s	RESISTOR,CHIP 120 1/16W (1608)
R103	1-211-986-11	s	RESISTOR,CHIP 51 1/16W (1608)
R104	1-211-986-11	s	RESISTOR,CHIP 51 1/16W (1608)
R105	1-211-986-11	s	RESISTOR,CHIP 51 1/16W (1608)
R106	1-211-986-11	s	RESISTOR,CHIP 51 1/16W (1608)
R107	1-211-986-11	s	RESISTOR,CHIP 51 1/16W (1608)
R108	1-211-986-11	s	RESISTOR,CHIP 51 1/16W (1608)
R109	1-218-825-11	s	RESISTOR,CHIP 120 1/16W (1608)
R110	1-218-825-11	s	RESISTOR,CHIP 120 1/16W (1608)
R111	1-211-986-11	s	RESISTOR,CHIP 51 1/16W (1608)
R112	1-211-986-11	s	RESISTOR,CHIP 51 1/16W (1608)
R113	1-211-986-11	s	RESISTOR,CHIP 51 1/16W (1608)
R114	1-211-986-11	s	RESISTOR,CHIP 51 1/16W (1608)
R115	1-218-871-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R200	1-216-847-11	s	RESISTOR, CHIP 150K 1/16W 1608
R201	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
RB100	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB101	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB102	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)

IPM-92A BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8327-096-A	o	MOUNTED CIRCUIT BOARD, IPM-92A
C701	1-126-400-11	s	CAPACITOR ELECT 22MF/35V(CHIP)
C702	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C703	1-162-964-11	s	CAPACITOR,CERAMIC 1000PF/50V B
C704	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C705	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C706	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C707	1-126-395-11	s	CAPACITOR,ELECT 22MF/16V(CHIP)
CN701	1-764-436-21	s	CONNECTOR, FPC (6P)
D701	8-719-057-63	s	DIODE PP701
L701	1-410-383-31	s	INDUCTOR,CHIP 15UH (3225)
Q701	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q702	8-729-122-63	s	TRANSISTOR 2SA1226-E4
Q703	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q704	8-729-102-07	s	TRANSISTOR 2SC2223-F13
R701	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R702	1-216-811-11	s	RESISTOR, CHIP 150 1/16W(1608)
R703	1-216-808-11	s	RESISTOR,CHIP 82 1/16W 1608
R704	1-216-813-11	s	RESISTOR, CHIP 220 1/16W 1608
R705	1-216-823-11	s	RESISTOR, CHIP 1.5K 1/16W
R706	1-216-830-11	s	RESISTOR,CHIP 5.6K 1/16W 1608
R707	1-216-827-11	s	RESISTOR, CHIP 3.3K 1/16W 1608
R708	1-216-836-11	s	RESISTOR, CHIP 18K 1/16W 1608
R709	1-216-818-11	s	RESISTOR, CHIP 560 1/16W 1608
R710	1-216-813-11	s	RESISTOR, CHIP 220 1/16W 1608
R711	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)

IPM-93A BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8327-097-A	o	MOUNTED CIRCUIT BOARD, IPM-93A
C801	1-126-400-11	s	CAPACITOR ELECT 22MF/35V(CHIP)
C802	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C803	1-162-964-11	s	CAPACITOR,CERAMIC 1000PF/50V B
C804	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C805	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C806	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C807	1-126-395-11	s	CAPACITOR,ELECT 22MF/16V(CHIP)
CN801	1-764-436-21	s	CONNECTOR, FPC (6P)
D801	8-719-057-63	s	DIODE PP701
L801	1-410-383-31	s	INDUCTOR,CHIP 15UH (3225)
Q801	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q802	8-729-122-63	s	TRANSISTOR 2SA1226-E4
Q803	8-729-102-07	s	TRANSISTOR 2SC2223-F13
Q804	8-729-102-07	s	TRANSISTOR 2SC2223-F13
R801	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R802	1-216-811-11	s	RESISTOR, CHIP 150 1/16W(1608)
R803	1-216-808-11	s	RESISTOR,CHIP 82 1/16W 1608
R804	1-216-813-11	s	RESISTOR, CHIP 220 1/16W 1608
R805	1-216-823-11	s	RESISTOR, CHIP 1.5K 1/16W
R806	1-216-830-11	s	RESISTOR,CHIP 5.6K 1/16W 1608
R807	1-216-827-11	s	RESISTOR, CHIP 3.3K 1/16W 1608
R808	1-216-836-11	s	RESISTOR, CHIP 18K 1/16W 1608
R809	1-216-818-11	s	RESISTOR, CHIP 560 1/16W 1608
R810	1-216-813-11	s	RESISTOR, CHIP 220 1/16W 1608
R811	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)

MA-107/107P BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8327-091-A	o	MOUNTED CIRCUIT BOARD, MA-107 [for J, UC]
1pc	A-8327-092-A	o	MOUNTED CIRCUIT BOARD, MA-107P [for CE]
C001	1-104-852-11	s	CAPACITOR,TANTALUM 22MF/10V
C004	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C005	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C006	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C007	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C008	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C009	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C010	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C011	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C012	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C013	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C014	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C015	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C016	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C025	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C026	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C027	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C028	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C029	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C030	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C031	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C032	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C033	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C034	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C035	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C036	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C037	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C038	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C039	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C040	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C041	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C042	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C043	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C044	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C045	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C046	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C047	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C048	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C049	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C050	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C051	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C052	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C053	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C054	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C055	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C056	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C057	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C060	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C061	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C062	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C063	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C064	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C065	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C066	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C067	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B

Ref. No. or Q'ty	Part No.	SP	Description
C068	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C069	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C070	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C071	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C072	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C073	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C074	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C075	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C076	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C077	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C078	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C079	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C080	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C081	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C082	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C083	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C084	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C085	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C086	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C087	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C088	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C089	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C090	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C091	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C092	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C093	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C094	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C095	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C096	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C097	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C100	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C101	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C102	1-162-968-11	s	CAPACITOR,CERAMIC 4700PF/50V B
C103	1-162-919-11	s	CAPACITOR,CERAMIC 22PF/50V CH
C104	1-104-920-11	s	CAPACITOR TANTALUM 4.7MF/35V
C105	1-162-919-11	s	CAPACITOR,CERAMIC 22PF/50V CH
C106	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C107	1-162-927-11	s	CAPACITOR,CERAMIC 100PF/50V CH
C108	1-104-852-11	s	CAPACITOR,TANTALUM 22MF/10V
C109	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C110	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C111	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C112	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C113	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C114	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C115	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C116	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C117	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C118	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C119	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C120	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C121	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C122	1-162-964-11	s	CAPACITOR,CERAMIC 1000PF/50V B
C123	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C124	1-165-128-11	s	CAPACITOR CERAMIC 0.22MF/16V F
C125	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C126	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C127	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C128	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C129	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C130	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C131	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C132	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C133	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C134	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C135	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C136	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C137	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C138	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C139	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C140	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C141	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C142	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C143	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C144	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C145	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C146	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C147	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C148	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C149	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C150	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C151	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C152	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C153	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C154	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C155	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C156	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C157	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C158	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C159	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C160	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C161	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C162	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C163	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C164	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C165	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C166	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C168	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C169	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C170	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C171	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C172	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C173	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C174	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C175	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C176	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C177	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C178	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C179	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C180	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C181	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C182	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C183	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C184	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C185	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C186	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C187	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C188	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B

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C189	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C190	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C191	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C192	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C193	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C194	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C195	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C196	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C197	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C198	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C199	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C200	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C202	1-135-070-00	s	CAPACITOR TANTALUM 0.1MF/35V
C204	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C205	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C206	1-135-145-11	s	CAPACITOR TANTALUM 0.47MF/35V
C207	1-135-145-11	s	CAPACITOR TANTALUM 0.47MF/35V
C208	1-162-968-11	s	CAPACITOR,CERAMIC 4700PF/50V B
C209	1-135-070-00	s	CAPACITOR TANTALUM 0.1MF/35V
C210	1-135-145-11	s	CAPACITOR TANTALUM 0.47MF/35V
C211	1-135-145-11	s	CAPACITOR TANTALUM 0.47MF/35V
C212	1-135-145-11	s	CAPACITOR TANTALUM 0.47MF/35V
C213	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C220	1-135-145-11	s	CAPACITOR TANTALUM 0.47MF/35V
C230	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C235	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C236	1-164-506-11	s	CAPACITOR,CERAMIC 4.7MF/16V
C237	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C241	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C249	1-115-170-11	s	CAPACITOR,TANTAL(SMD)4.7MF/10V
C250	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C251	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C252	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C253	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C254	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C255	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C256	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C257	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C258	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C259	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C260	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C261	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C262	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C263	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C264	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C265	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C266	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C267	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C268	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C269	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C270	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C271	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C272	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C273	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C274	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C275	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C276	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C277	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C278	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B

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Ref. No. or Q'ty	Part No.	SP	Description
C279	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C280	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C281	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C291	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C292	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C293	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C294	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C295	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C296	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C297	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C300	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C301	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C302	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C303	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C304	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C305	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C306	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C310	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C311	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C312	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C313	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C314	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C315	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C316	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C317	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C318	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C319	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C320	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C321	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C322	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C323	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C324	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C325	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C326	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C327	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C328	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C329	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C330	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C331	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C332	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C333	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C335	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C336	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C337	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C338	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C390	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C391	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C395	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C401	1-115-154-11	s	CAPACITOR ELECT 10MF/16V(BP)
C402	1-165-176-11	s	CAPACITOR,CERAMIC 47000PF/16V
C403	1-115-154-11	s	CAPACITOR ELECT 10MF/16V(BP)
C404	1-165-176-11	s	CAPACITOR,CERAMIC 47000PF/16V
C405	1-115-154-11	s	CAPACITOR ELECT 10MF/16V(BP)
C406	1-165-176-11	s	CAPACITOR,CERAMIC 47000PF/16V
C407	1-115-154-11	s	CAPACITOR ELECT 10MF/16V(BP)
C408	1-165-176-11	s	CAPACITOR,CERAMIC 47000PF/16V
C409	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C410	1-165-176-11	s	CAPACITOR,CERAMIC 47000PF/16V
C411	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F

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C412	1-165-176-11	s	CAPACITOR,CERAMIC 47000PF/16V
C413	1-165-176-11	s	CAPACITOR,CERAMIC 47000PF/16V
C414	1-165-176-11	s	CAPACITOR,CERAMIC 47000PF/16V
C415	1-162-921-11	s	CAPACITOR,CERAMIC 33PF/50V CH
C416	1-162-921-11	s	CAPACITOR,CERAMIC 33PF/50V CH
C421	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C422	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C423	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C424	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C425	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C426	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C427	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C428	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C429	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C430	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C431	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C432	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C433	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C434	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C435	1-125-891-11	s	CAPACITOR CERAMIC 0.47MF/10V
C436	1-104-852-11	s	CAPACITOR,TANTALUM 22MF/10V
C437	1-115-170-11	s	CAPACITOR,TANTAL(SMD)4.7MF/10V
C438	1-115-170-11	s	CAPACITOR,TANTAL(SMD)4.7MF/10V
C440	1-115-170-11	s	CAPACITOR,TANTAL(SMD)4.7MF/10V
C441	1-115-170-11	s	CAPACITOR,TANTAL(SMD)4.7MF/10V
C442	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C443	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C444	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C445	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C446	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C447	1-162-919-11	s	CAPACITOR,CERAMIC 22PF/50V CH
C448	1-162-921-11	s	CAPACITOR,CERAMIC 33PF/50V CH
C449	1-162-919-11	s	CAPACITOR,CERAMIC 22PF/50V CH
C450	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C451	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C452	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C454	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C455	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C456	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C457	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C458	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C459	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C460	1-115-170-11	s	CAPACITOR,TANTAL(SMD)4.7MF/10V
C461	1-115-170-11	s	CAPACITOR,TANTAL(SMD)4.7MF/10V
C462	1-115-170-11	s	CAPACITOR,TANTAL(SMD)4.7MF/10V
C464	1-107-686-11	s	CAPACITOR,TANTALUM 4.7MF/16V
C465	1-107-686-11	s	CAPACITOR,TANTALUM 4.7MF/16V
C466	1-107-686-11	s	CAPACITOR,TANTALUM 4.7MF/16V
C467	1-117-681-11	s	CAPACITOR, ELECT 100MF/16V
C468	1-126-395-11	s	CAPACITOR,ELECT 22MF/16V(CHIP)
C469	1-117-681-11	s	CAPACITOR, ELECT 100MF/16V
C470	1-117-681-11	s	CAPACITOR, ELECT 100MF/16V
C471	1-126-395-11	s	CAPACITOR,ELECT 22MF/16V(CHIP)
C472	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C473	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C474	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C475	1-125-891-11	s	CAPACITOR CERAMIC 0.47MF/10V
C476	1-104-852-11	s	CAPACITOR,TANTALUM 22MF/10V
C477	1-113-985-11	s	CAPACITOR,TANTALUM 10MF/20V

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Ref. No. or Q'ty	Part No.	SP	Description
C478	1-113-985-11	s	CAPACITOR,TANTALUM 10MF/20V
C479	1-115-170-11	s	CAPACITOR,TANTAL(SMD)4.7MF/10V
C480	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C481	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C483	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C484	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C485	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C486	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C487	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C488	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C489	1-115-170-11	s	CAPACITOR,TANTAL(SMD)4.7MF/10V
C490	1-115-170-11	s	CAPACITOR,TANTAL(SMD)4.7MF/10V
C491	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C492	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C493	1-107-686-11	s	CAPACITOR,TANTALUM 4.7MF/16V
C494	1-107-686-11	s	CAPACITOR,TANTALUM 4.7MF/16V
C495	1-117-681-11	s	CAPACITOR, ELECT 100MF/16V
C496	1-126-395-11	s	CAPACITOR,ELECT 22MF/16V(CHIP)
C497	1-117-681-11	s	CAPACITOR, ELECT 100MF/16V
C498	1-162-919-11	s	CAPACITOR,CERAMIC 22PF/50V CH
C499	1-162-921-11	s	CAPACITOR,CERAMIC 33PF/50V CH
C500	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C501	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C505	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C506	1-115-170-11	s	CAPACITOR,TANTAL(SMD)4.7MF/10V
C507	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C508	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C509	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C510	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C511	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C512	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C513	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C514	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C515	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C516	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C517	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C518	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C519	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C520	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C521	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C524	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C525	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C526	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C527	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C528	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C529	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C530	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C531	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C534	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C535	1-125-891-11	s	CAPACITOR CERAMIC 0.47MF/10V
C536	1-104-852-11	s	CAPACITOR,TANTALUM 22MF/10V
C537	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C538	1-162-965-11	s	CAPACITOR,CERAMIC 1500PF/50V B
C539	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C540	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C541	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C542	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C543	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C550	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B

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Ref. No. or Q'ty	Part No.	SP	Description
C551	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C552	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C553	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C554	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C555	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C556	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C557	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C558	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C559	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C560	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C561	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C562	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C563	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C564	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C565	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C566	1-162-965-11	s	CAPACITOR,CERAMIC 1500PF/50V B
C567	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C568	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C569	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C570	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C571	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C572	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C573	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C580	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C581	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C582	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C583	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C584	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C585	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C586	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C587	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C588	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C589	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C590	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C591	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C592	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C593	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C600	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C601	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C602	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C604	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C605	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C610	1-126-394-11	s	CAPACITOR,ELECT 10MF/16V(CHIP)
C611	1-126-394-11	s	CAPACITOR,ELECT 10MF/16V(CHIP)
C612	1-162-964-11	s	CAPACITOR,CERAMIC 1000PF/50V B
C613	1-135-177-21	s	CAPACITOR TANTALUM 1MF/25V
C614	1-162-925-11	s	CAPACITOR,CERAMIC 68PF/50V CH
C615	1-162-919-11	s	CAPACITOR,CERAMIC 22PF/50V CH
C616	1-115-153-11	s	CAPACITOR,ELECT 4.7MF/16V(BP)
C617	1-162-925-11	s	CAPACITOR,CERAMIC 68PF/50V CH
C618	1-162-964-11	s	CAPACITOR,CERAMIC 1000PF/50V B
C619	1-135-177-21	s	CAPACITOR TANTALUM 1MF/25V
C621	1-164-506-11	s	CAPACITOR,CERAMIC 4.7MF/16V
C622	1-115-153-11	s	CAPACITOR,ELECT 4.7MF/16V(BP)
C623	1-162-964-11	s	CAPACITOR,CERAMIC 1000PF/50V B
C624	1-135-177-21	s	CAPACITOR TANTALUM 1MF/25V
C625	1-162-925-11	s	CAPACITOR,CERAMIC 68PF/50V CH
C626	1-126-394-11	s	CAPACITOR,ELECT 10MF/16V(CHIP)
C627	1-115-153-11	s	CAPACITOR,ELECT 4.7MF/16V(BP)

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C628	1-115-153-11	s	CAPACITOR,ELECT 4.7MF/16V(BP)
C629	1-164-506-11	s	CAPACITOR,CERAMIC 4.7MF/16V
C630	1-126-394-11	s	CAPACITOR,ELECT 10MF/16V(CHIP)
C631	1-126-394-11	s	CAPACITOR,ELECT 10MF/16V(CHIP)
C632	1-164-227-11	s	CAPACITOR,CERAMIC 0.022MF/25V
C633	1-164-227-11	s	CAPACITOR,CERAMIC 0.022MF/25V
C634	1-117-681-11	s	CAPACITOR, ELECT 100MF/16V
C635	1-165-128-11	s	CAPACITOR CERAMIC 0.22MF/16V F
C636	1-115-153-11	s	CAPACITOR,ELECT 4.7MF/16V(BP)
C637	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C638	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C639	1-126-394-11	s	CAPACITOR,ELECT 10MF/16V(CHIP)
C640	1-162-919-11	s	CAPACITOR,CERAMIC 22PF/50V CH
C641	1-162-919-11	s	CAPACITOR,CERAMIC 22PF/50V CH
C646	1-164-506-11	s	CAPACITOR,CERAMIC 4.7MF/16V
C647	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C650	1-162-923-11	s	CAPACITOR,CERAMIC 47PF/50V CH
C651	1-107-686-11	s	CAPACITOR,TANTALUM 4.7MF/16V
C652	1-162-923-11	s	CAPACITOR,CERAMIC 47PF/50V CH
C653	1-162-923-11	s	CAPACITOR,CERAMIC 47PF/50V CH
C654	1-162-915-11	s	CAPACITOR,CERAMIC 10PF/50V CH
C655	1-107-686-11	s	CAPACITOR,TANTALUM 4.7MF/16V
C657	1-162-964-11	s	CAPACITOR,CERAMIC 1000PF/50V B
C659	1-107-686-11	s	CAPACITOR,TANTALUM 4.7MF/16V
C660	1-162-964-11	s	CAPACITOR,CERAMIC 1000PF/50V B
C661	1-115-170-11	s	CAPACITOR,TANTAL(SMD)4.7MF/10V
C662	1-162-965-11	s	CAPACITOR,CERAMIC 1500PF/50V B
C663	1-162-923-11	s	CAPACITOR,CERAMIC 47PF/50V CH
C664	1-164-227-11	s	CAPACITOR,CERAMIC 0.022MF/25V
C665	1-164-506-11	s	CAPACITOR,CERAMIC 4.7MF/16V
C666	1-107-686-11	s	CAPACITOR,TANTALUM 4.7MF/16V
C667	1-162-965-11	s	CAPACITOR,CERAMIC 1500PF/50V B
C668	1-126-394-11	s	CAPACITOR,ELECT 10MF/16V(CHIP)
C669	1-115-170-11	s	CAPACITOR,TANTAL(SMD)4.7MF/10V
C670	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C671	1-164-506-11	s	CAPACITOR,CERAMIC 4.7MF/16V
C672	1-164-506-11	s	CAPACITOR,CERAMIC 4.7MF/16V
C673	1-109-982-11	s	CAPACITOR,CHIP CERAMIC 1MF/10V
C703	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C704	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C747	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C748	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C749	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C750	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C751	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C752	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C753	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C754	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C755	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C756	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C757	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C758	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C759	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C760	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C761	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C763	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C764	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C765	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C766	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F

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C767	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C768	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C769	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C770	1-162-919-11	s	CAPACITOR,CERAMIC 22PF/50V CH
C771	1-162-919-11	s	CAPACITOR,CERAMIC 22PF/50V CH
C780	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C781	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C782	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C785	1-162-921-11	s	CAPACITOR,CERAMIC 33PF/50V CH
C786	1-162-921-11	s	CAPACITOR,CERAMIC 33PF/50V CH
C800	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C801	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C802	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C803	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C804	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C805	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C806	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C807	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C808	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C809	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C810	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C811	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C812	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C815	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C820	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C821	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C822	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C823	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C824	1-115-170-11	s	CAPACITOR,TANTAL(SMD)4.7MF/10V
C825	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C900	1-128-989-11	s	CAPACITOR,POLYPYRROLE 220MF
C901	1-128-989-11	s	CAPACITOR,POLYPYRROLE 220MF
C902	1-128-989-11	s	CAPACITOR,POLYPYRROLE 220MF
C903	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C904	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C906	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C910	1-125-990-11	s	CAPACITOR,TANTALUM 47MF/20V
C911	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C915	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C917	1-113-985-11	s	CAPACITOR,TANTALUM 10MF/20V
C918	1-135-347-11	s	CAP, SOLID ELECT 82MF
C920	1-107-823-11	s	CAPACITOR,CERAMIC 0.47MF/16V
C921	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C922	1-135-347-11	s	CAP, SOLID ELECT 82MF
C924	1-107-823-11	s	CAPACITOR,CERAMIC 0.47MF/16V
C925	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C926	1-135-347-11	s	CAP, SOLID ELECT 82MF
C927	1-128-989-11	s	CAPACITOR,POLYPYRROLE 220MF
C928	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C929	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C930	1-109-982-11	s	CAPACITOR,CHIP CERAMIC 1MF/10V
C931	1-107-686-11	s	CAPACITOR,TANTALUM 4.7MF/16V
C932	1-135-347-11	s	CAP, SOLID ELECT 82MF
C933	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
C934	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C935	1-109-982-11	s	CAPACITOR,CHIP CERAMIC 1MF/10V
C936	1-109-982-11	s	CAPACITOR,CHIP CERAMIC 1MF/10V
C937	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C938	1-115-170-11	s	CAPACITOR,TANTAL(SMD)4.7MF/10V

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C940	1-162-964-11	s	CAPACITOR,CERAMIC 1000PF/50V B
C941	1-107-826-11	s	CAPACITOR,CHIP CERAMIC 0.1MF
C942	1-162-970-11	s	CAPACITOR CERAMIC 0.01MF/25V B
CN100	1-691-591-11	o	PIN,CONNECTOR (8P)(SMD)(1.5MM)
CN101	1-691-523-21	o	CONNECTOR, BOARD TO BOARD 12PE
CN200	1-766-194-11	o	CONNECTOR, D-SUB 9P
CN230	1-778-006-21	o	CONNECTOR, BOARD TO BOARD 20P
CN251	1-815-187-11	s	JACK, MODULAR
CN400	1-793-457-11	s	JACK, S TERMINAL
CN401	1-793-455-11	s	JACK, PIN (4P)
CN402	1-566-847-41	s	CONNECTOR 4P
CN600	1-565-790-21	s	JACK,SMALL 2P
CN601	1-691-550-11	s	PIN,CONNECTOR (3P)(SMD)(1.5MM)
CN602	1-695-320-21	o	PIN, CONNECTOR(1.5MM)SMD 2P
CN603	1-562-941-11	s	JACK, PIN
CN750	1-750-874-21	s	CONNECTOR, PC BOARD (PLUG) 60P
CN780	1-565-276-21	s	JACK 1P (SMALL TYPE)
CN781	1-565-276-21	s	JACK 1P (SMALL TYPE)
CN790	1-691-523-21	o	CONNECTOR, BOARD TO BOARD 12P
CN800	1-793-458-11	s	JACK, MODULAR (8 CORE)
CN900 ⚠	1-793-459-11	s	JACK,DC(POLARITY UNIFIED TYPE)
CN901	1-695-209-21	s	PIN, CONNECTOR (PC BOARD) 15P
CN902	1-774-765-11	s	CONNECTOR, FFC/FPC 8P
COR800	1-564-952-21	s	PIN,CONNECTOR
D140	8-719-820-05	s	DIODE 1SS181
D200	8-719-037-25	s	DIODE RD13SB-T1
D201	8-719-037-25	s	DIODE RD13SB-T1
D202	8-719-037-25	s	DIODE RD13SB-T1
D203	8-719-037-25	s	DIODE RD13SB-T1
D220	8-719-158-15	s	DIODE RD5.6SB
D221	8-719-158-15	s	DIODE RD5.6SB
D222	8-719-037-25	s	DIODE RD13SB-T1
D223	8-719-037-25	s	DIODE RD13SB-T1
D224	8-719-037-25	s	DIODE RD13SB-T1
D225	8-719-158-15	s	DIODE RD5.6SB
D226	8-719-158-15	s	DIODE RD5.6SB
D227	8-719-158-19	s	DIODE RD6.2SB
D228	8-719-037-25	s	DIODE RD13SB-T1
D229	8-719-037-25	s	DIODE RD13SB-T1
D230	8-719-037-25	s	DIODE RD13SB-T1
D231	8-719-158-19	s	DIODE RD6.2SB
D401	8-719-158-15	s	DIODE RD5.6SB
D402	8-719-158-15	s	DIODE RD5.6SB
D403	8-719-158-15	s	DIODE RD5.6SB
D404	8-719-158-15	s	DIODE RD5.6SB
D405	8-719-158-15	s	DIODE RD5.6SB
D406	8-719-158-15	s	DIODE RD5.6SB
D451	8-719-158-15	s	DIODE RD5.6SB
D452	8-719-158-15	s	DIODE RD5.6SB
D453	8-719-158-15	s	DIODE RD5.6SB
D454	8-719-158-15	s	DIODE RD5.6SB
D455	8-719-158-15	s	DIODE RD5.6SB
D456	8-719-158-15	s	DIODE RD5.6SB
D481	8-719-158-15	s	DIODE RD5.6SB
D482	8-719-158-15	s	DIODE RD5.6SB
D483	8-719-158-15	s	DIODE RD5.6SB
D484	8-719-158-15	s	DIODE RD5.6SB
D600	8-719-158-35	s	DIODE RD9.1SB(ZENER)

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Ref. No. or Q’ty	Part No.	SP	Description
D601	8-719-158-35	s	DIODE RD9.1SB(ZENER)
D602	8-719-800-76	s	DIODE 1SS226
D603	8-719-037-25	s	DIODE RD13SB-T1
D604	8-719-800-76	s	DIODE 1SS226
D605	8-719-158-19	s	DIODE RD6.2SB
D606	8-719-158-19	s	DIODE RD6.2SB
D607	8-719-158-19	s	DIODE RD6.2SB
D608	8-719-158-19	s	DIODE RD6.2SB
D609	8-719-037-25	s	DIODE RD13SB-T1
D610	8-719-158-19	s	DIODE RD6.2SB
D611	8-719-158-19	s	DIODE RD6.2SB
D780	8-719-820-05	s	DIODE 1SS181
D781	8-719-158-19	s	DIODE RD6.2SB
D782	8-719-158-19	s	DIODE RD6.2SB
D791	8-719-158-19	s	DIODE RD6.2SB
D800	8-719-800-76	s	DIODE 1SS226
D801	8-719-800-76	s	DIODE 1SS226
D802	8-719-800-76	s	DIODE 1SS226
D803	8-719-800-76	s	DIODE 1SS226
D804	8-719-800-76	s	DIODE 1SS226
D805	8-719-800-76	s	DIODE 1SS226
D806	8-719-800-76	s	DIODE 1SS226
D807	8-719-800-76	s	DIODE 1SS226
D808	8-719-800-76	s	DIODE 1SS226
D809	8-719-800-76	s	DIODE 1SS226
D810	8-719-800-76	s	DIODE 1SS226
D811	8-719-800-76	s	DIODE 1SS226
D900	8-719-056-00	s	DIODE NSQ03A02L
D901	8-719-056-00	s	DIODE NSQ03A02L
D902	8-719-820-05	s	DIODE 1SS181
D903	8-719-056-00	s	DIODE NSQ03A02L
D905	8-719-056-00	s	DIODE NSQ03A02L
D907	8-719-061-59	s	LED CL-200PG-C-TU
D908	8-719-049-22	s	DIODE CL-200D-C-TS
E101	1-535-757-11	s	CHIP, CHECKER (CONNECTOR)
E102	1-535-757-11	s	CHIP, CHECKER (CONNECTOR)
E103	1-535-757-11	s	CHIP, CHECKER (CONNECTOR)
E104	1-535-757-11	s	CHIP, CHECKER (CONNECTOR)
E105	1-535-757-11	s	CHIP, CHECKER (CONNECTOR)
E106	1-535-757-11	s	CHIP, CHECKER (CONNECTOR)
E107	1-535-757-11	s	CHIP, CHECKER (CONNECTOR)
E301	1-535-757-11	s	CHIP, CHECKER (CONNECTOR)
E401	1-535-757-11	s	CHIP, CHECKER (CONNECTOR)
E501	1-535-757-11	s	CHIP, CHECKER (CONNECTOR)
E701	1-535-757-11	s	CHIP, CHECKER (CONNECTOR)
F900	⚠ 1-533-804-21	s	FUSE CHIP 2.5A/125V (6125)
F901	⚠ 1-533-627-21	s	FUSE CHIP 5A/125V (6125)
FB601	1-414-445-11	s	FERRITE, EMI (SMD)
FB602	1-414-445-11	s	FERRITE, EMI (SMD)
FL200	1-239-825-11	s	FILTER, CHIP EMI
FL201	1-239-825-11	s	FILTER, CHIP EMI
FL401	1-239-825-11	s	FILTER, CHIP EMI
FL402	1-239-825-11	s	FILTER, CHIP EMI
FL403	1-239-825-11	s	FILTER, CHIP EMI
FL451	1-233-709-11	s	FILTER, LOW PASS
FL452	1-233-709-11	s	FILTER, LOW PASS
FL453	1-233-709-11	s	FILTER, LOW PASS

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Ref. No. or Q’ty	Part No.	SP	Description
FL461	1-239-825-11	s	FILTER, CHIP EMI
FL462	1-239-825-11	s	FILTER, CHIP EMI
FL463	1-239-825-11	s	FILTER, CHIP EMI
FL481	1-233-709-11	s	FILTER, LOW PASS
FL482	1-233-709-11	s	FILTER, LOW PASS
FL491	1-239-825-11	s	FILTER, CHIP EMI
FL492	1-239-825-11	s	FILTER, CHIP EMI
FL600	1-239-825-11	s	FILTER, CHIP EMI
FL601	1-239-825-11	s	FILTER, CHIP EMI
FL602	1-239-825-11	s	FILTER, CHIP EMI
FL603	1-239-825-11	s	FILTER, CHIP EMI
FL604	1-239-825-11	s	FILTER, CHIP EMI
FL605	1-239-825-11	s	FILTER, CHIP EMI
FL606	1-239-825-11	s	FILTER, CHIP EMI
FL780	1-239-825-11	s	FILTER, CHIP EMI
FL781	1-239-825-11	s	FILTER, CHIP EMI
FL782	1-239-825-11	s	FILTER, CHIP EMI
FL783	1-239-825-11	s	FILTER, CHIP EMI
FL800	⚠ 1-239-773-11	s	FILTER, EMI CHOKE
FL900	1-239-825-11	s	FILTER, CHIP EMI
FL901	1-239-825-11	s	FILTER, CHIP EMI
FL902	1-239-825-11	s	FILTER, CHIP EMI
FL903	1-239-825-11	s	FILTER, CHIP EMI
FL904	1-239-825-11	s	FILTER, CHIP EMI
FL905	1-239-825-11	s	FILTER, CHIP EMI
FL906	1-239-825-11	s	FILTER, CHIP EMI
IC101	8-759-713-79	s	IC MB81F643242C-10FN
IC102	8-759-713-79	s	IC MB81F643242C-10FN
IC103	8-759-824-93	o	IC MBM29LV651UE90TN-RAP23V2
IC104	8-759-824-94	o	IC MBM29LV651UE90TN-RAP24V2
IC105	8-759-475-58	s	IC TC74LCX16245AFT(EL)
IC106	8-759-451-76	s	IC SN74LVC244APW(-E05)
IC107	8-759-497-44	s	IC TC7WH125FU(TE12R)
IC108	8-759-475-58	s	IC TC74LCX16245AFT(EL)
IC109	8-759-451-76	s	IC SN74LVC244APW(-E05)
IC110	8-759-833-08	o	IC EPM7128AETC100-7-RAP02V2
IC111	8-759-651-59	s	IC SN74CBTLV3245APWR
IC112	8-759-651-59	s	IC SN74CBTLV3245APWR
IC114	8-759-475-37	s	IC TC74LCX14FT(EL)
IC115	8-759-669-69	s	IC TLC7733IPWR-12
IC116	8-759-651-59	s	IC SN74CBTLV3245APWR
IC121	8-759-475-58	s	IC TC74LCX16245AFT(EL)
IC122	8-759-475-58	s	IC TC74LCX16245AFT(EL)
IC123	8-759-651-59	s	IC SN74CBTLV3245APWR
IC124	8-759-651-59	s	IC SN74CBTLV3245APWR
IC126	8-759-362-65	s	IC MIC29152BU-T&R
IC200	8-759-484-69	s	IC MAX3221CAE
IC204	8-759-442-26	s	IC MAX3222CAP
IC205	8-759-271-86	s	IC TC7SH04FU
IC230	8-759-584-32	s	IC MB86189PFV-G-BND-ER
IC231	8-759-569-93	s	IC TPS2211IDBR
IC250	8-759-699-02	s	IC LAN91C100FDTQFP
IC251	8-759-699-01	s	IC LAN83C183TQFP
IC252	8-759-570-08	s	IC TC7SET32FU(TE85R)
IC254	8-759-271-86	s	IC TC7SH04FU
IC300	8-759-654-17	s	IC 8X83606AKCB
IC301	8-759-827-44	s	IC GS74116TP-12TR
IC302	8-759-827-44	s	IC GS74116TP-12TR

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Ref. No. or Q’ty	Part No.	SP	Description
IC303	8-759-543-83	s	IC KM416V1204CT-L6
IC304	8-759-543-83	s	IC KM416V1204CT-L6
IC305	8-759-543-83	s	IC KM416V1204CT-L6
IC306	8-759-543-83	s	IC KM416V1204CT-L6
IC351	8-759-713-79	s	IC MB81F643242C-10FN
IC371	8-759-713-79	s	IC MB81F643242C-10FN
IC390	8-759-590-57	o	IC IDT49FCT3805PY-TL
IC391	8-759-475-39	s	IC TC74LCX74FT(EL)
IC400	8-759-676-15	s	IC IC SAA7114H/V1-557
IC435	8-759-460-72	s	IC BA033FP
IC450	8-752-393-98	o	IC CXD1916R
IC451	8-759-429-17	s	IC NJM2268V
IC452	8-759-429-17	s	IC NJM2268V
IC475	8-759-460-72	s	IC BA033FP
IC480	8-752-393-98	o	IC CXD1916R
IC481	8-759-429-17	s	IC NJM2268V
IC500	8-759-669-75	s	IC TLC2932IPWR
IC501	8-759-598-29	o	IC M4LV-64/32-12VC-RAP00V1
IC520	8-759-698-03	s	IC UPD77110GC-9EU
IC521	8-759-573-65	s	IC IDT71V016S20PHAU-TL
IC530	8-759-698-03	s	IC UPD77110GC-9EU
IC531	8-759-573-65	s	IC IDT71V016S20PHAU-TL
IC535	8-749-017-21	s	IC SI-3025LS-TL
IC540	8-759-825-84	s	IC DSP56303PV100
IC541	8-759-827-82	s	IC IS61LV256-15T(T&R)
IC542	8-759-827-82	s	IC IS61LV256-15T(T&R)
IC543	8-759-827-82	s	IC IS61LV256-15T(T&R)
IC570	8-759-825-84	s	IC DSP56303PV100
IC571	8-759-827-82	s	IC IS61LV256-15T(T&R)
IC572	8-759-827-82	s	IC IS61LV256-15T(T&R)
IC573	8-759-827-82	s	IC IS61LV256-15T(T&R)
IC600	8-759-647-71	s	IC AK4550VT-E2
IC601	8-759-553-67	s	IC UPC4574G2-E2
IC602	8-759-553-67	s	IC UPC4574G2-E2
IC604	8-759-526-64	s	IC NJM2521M(TE2)
IC605	8-759-702-02	s	IC NJM062M
IC703	8-759-451-76	s	IC SN74LVC244APW(-E05)
IC704	8-759-531-92	s	IC TC7WH04FU(TE12R)
IC750	8-759-374-17	s	IC UPD65646GJ-171-3EB
IC751	8-759-491-50	s	IC TC74VHCT244AFT(EL)
IC752	8-759-491-50	s	IC TC74VHCT244AFT(EL)
IC753	8-759-491-50	s	IC TC74VHCT244AFT(EL)
IC754	8-759-451-76	s	IC SN74LVC244APW(-E05)
IC755	8-759-475-58	s	IC TC74LCX16245AFT(EL)
IC756	8-759-497-44	s	IC TC7WH125FU(TE12R)
IC757	8-759-196-96	s	IC TC7SH08FU (TE85R)
IC758	8-759-491-50	s	IC TC74VHCT244AFT(EL)
IC759	8-759-491-50	s	IC TC74VHCT244AFT(EL)
IC760	8-759-196-97	s	IC TC7SH32FU (TE85R)
IC761	8-759-491-45	s	IC TC74VHCT00AFT(EL)
IC780	8-759-831-39	s	IC UPD17226GT-454-E2
IC781	8-759-491-46	s	IC TC74VHCT04AFT (EL)
IC782	8-759-491-45	s	IC TC74VHCT00AFT(EL)
IC800	8-759-396-70	s	IC HD81504RFE
IC801	8-759-532-02	s	IC CY62256LL-70ZC-T2
IC802	8-759-532-02	s	IC CY62256LL-70ZC-T2
IC803	8-759-491-47	s	IC TC74VHCT08FT (EL)
IC804	8-759-491-48	s	IC TC74VHCT138AFT(EL)
IC805	8-759-491-55	s	IC TC74VHCT74AFT(EL)

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Ref. No. or Q’ty	Part No.	SP	Description
IC806	8-759-491-48	s	IC TC74VHCT138AFT(EL)
IC807	8-759-523-39	s	IC TC74ACT32FT(EL)
IC808	8-759-491-53	s	IC TC74VHCT374AFT (EL)
IC809	8-759-491-53	s	IC TC74VHCT374AFT (EL)
IC810	8-759-491-51	s	IC TC74VHCT245AFT(EL)
IC811	8-759-491-50	s	IC TC74VHCT244AFT(EL)
IC812	8-759-523-39	s	IC TC74ACT32FT(EL)
IC900	8-759-485-63	s	IC MAX1626ESA-TE2
IC901	8-759-485-63	s	IC MAX1626ESA-TE2
IC902	8-759-349-40	s	IC MAX786CAI-TE2
IC904	8-759-578-49	s	IC NJM2370U10-TE2
IC905	8-759-475-33	s	IC TC74LCX00FT(EL)
IC906	8-759-475-34	s	IC TC74LCX02FT(EL)
IC908	8-759-598-50	s	ICL88MS09T-FA-TL
L251	1-408-765-21	s	CHIP INDUCTOR 1UH (4532)
L435	1-408-777-00	s	CHIP INDUCTOR 10UH (4532)
L436	1-408-777-00	s	CHIP INDUCTOR 10UH (4532)
L440	1-408-777-00	s	CHIP INDUCTOR 10UH (4532)
L490	1-408-777-00	s	CHIP INDUCTOR 10UH (4532)
L491	1-408-777-00	s	CHIP INDUCTOR 10UH (4532)
L492	1-408-777-00	s	CHIP INDUCTOR 10UH (4532)
L500	1-412-951-11	s	INDUCTOR 10UH (2520)
L601	1-412-951-11	s	INDUCTOR 10UH (2520)
L800	1-412-951-11	s	INDUCTOR 10UH (2520)
L900	1-469-530-11	s	INDUCTOR, (SMD) 47UH
L901	1-469-530-11	s	INDUCTOR, (SMD) 47UH
L902	1-469-529-11	s	INDUCTOR, (SMD) 10UH
L903	1-469-529-11	s	INDUCTOR, (SMD) 10UH
L904	1-408-769-41	s	CHIP INDUCTOR 2.2UH
Q401	8-729-117-32	s	TRANSISTOR 2SC4177
Q402	8-729-117-32	s	TRANSISTOR 2SC4177
Q403	8-729-117-32	s	TRANSISTOR 2SC4177
Q404	8-729-117-32	s	TRANSISTOR 2SC4177
Q405	8-729-117-32	s	TRANSISTOR 2SC4177
Q406	8-729-117-32	s	TRANSISTOR 2SC4177
Q450	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q451	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q452	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q453	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q454	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q455	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q480	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q481	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q482	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q483	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q600	8-729-117-32	s	TRANSISTOR 2SC4177
Q601	8-729-117-32	s	TRANSISTOR 2SC4177
Q602	8-729-117-32	s	TRANSISTOR 2SC4177
Q603	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q604	8-729-202-38	s	TRANSISTOR 2SC3326N-A
Q605	8-729-117-32	s	TRANSISTOR 2SC4177
Q606	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q607	8-729-202-38	s	TRANSISTOR 2SC3326N-A
Q608	8-729-117-32	s	TRANSISTOR 2SC4177
Q609	8-729-140-63	s	TRANSISTOR 2SA1611-M5M6
Q610	8-729-202-38	s	TRANSISTOR 2SC3326N-A
Q900	8-729-043-75	s	TRANSISTOR MMSF3P02HDR2
Q901	8-729-043-75	s	TRANSISTOR MMSF3P02HDR2
Q902	8-729-025-01	s	TRANSISTOR SI9410DY

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Ref. No. or Q'ty	Part No.	SP	Description
Q903	8-729-025-01	s	TRANSISTOR SI9410DY
Q904	8-729-117-32	s	TRANSISTOR 2SC4177
Q905	8-729-117-32	s	TRANSISTOR 2SC4177
Q906	8-729-025-01	s	TRANSISTOR SI9410DY
Q907	8-729-025-01	s	TRANSISTOR SI9410DY
Q908	8-729-117-32	s	TRANSISTOR 2SC4177
Q909	8-729-117-32	s	TRANSISTOR 2SC4177
Q910	8-729-117-32	s	TRANSISTOR 2SC4177
Q911	8-729-117-32	s	TRANSISTOR 2SC4177
Q912	8-729-117-32	s	TRANSISTOR 2SC4177
R47	1-216-295-00	s	CONDUCTOR, CHIP (2012)
R100	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R101	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R102	1-216-817-11	s	RESISTOR,CHIP 470 1/16W 1608
R103	1-216-837-11	s	RESISTOR,CHIP 22K 1/16W 1608
R104	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R105	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R106	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R107	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R108	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R109	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R111	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R112	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R113	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R114	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R119	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R120	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R121	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R124	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R125	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R126	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R127	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R128	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R129	1-216-805-11	s	RESISTOR,CHIP 47 1/16W 1608
R131	1-218-889-11	s	RESISTOR,CHIP 56K 1/16W(1608)
R132	1-218-847-11	s	RESISTOR, CHIP 1K 1/16W (1608)
R133	1-218-847-11	s	RESISTOR, CHIP 1K 1/16W (1608)
R134	1-218-895-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R136	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R138	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R139	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R140	1-216-793-11	s	RESISTOR,CHIP 4.7 1/16W 1608
R141	1-216-793-11	s	RESISTOR,CHIP 4.7 1/16W 1608
R142	1-216-793-11	s	RESISTOR,CHIP 4.7 1/16W 1608
R143	1-216-793-11	s	RESISTOR,CHIP 4.7 1/16W 1608
R147	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R152	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R160	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R162	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R191	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R193	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R200	1-216-817-11	s	RESISTOR,CHIP 470 1/16W 1608
R201	1-216-857-11	s	RESISTOR,CHIP 1M 1/16W(1608)
R202	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R203	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R204	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R205	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R206	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R207	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)

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Ref. No. or Q'ty	Part No.	SP	Description
R208	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R216	1-216-817-11	s	RESISTOR,CHIP 470 1/16W 1608
R217	1-216-817-11	s	RESISTOR,CHIP 470 1/16W 1608
R218	1-216-817-11	s	RESISTOR,CHIP 470 1/16W 1608
R219	1-216-817-11	s	RESISTOR,CHIP 470 1/16W 1608
R220	1-216-841-11	s	RESISTOR, CHIP 47K 1/16W 1608
R221	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R222	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R223	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R224	1-216-791-11	s	RESISTOR,CHIP 3.3 1/16W 1608
R225	1-211-985-11	s	RESISTOR,CHIP 47 1/16W (1608)
R226	1-216-791-11	s	RESISTOR,CHIP 3.3 1/16W 1608
R227	1-211-977-11	s	RESISTOR,CHIP 22 1/16W (1608)
R228	1-216-791-11	s	RESISTOR,CHIP 3.3 1/16W 1608
R229	1-211-977-11	s	RESISTOR,CHIP 22 1/16W (1608)
R230	1-216-791-11	s	RESISTOR,CHIP 3.3 1/16W 1608
R231	1-211-977-11	s	RESISTOR,CHIP 22 1/16W (1608)
R232	1-216-791-11	s	RESISTOR,CHIP 3.3 1/16W 1608
R233	1-211-977-11	s	RESISTOR,CHIP 22 1/16W (1608)
R234	1-216-791-11	s	RESISTOR,CHIP 3.3 1/16W 1608
R235	1-211-985-11	s	RESISTOR,CHIP 47 1/16W (1608)
R236	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R237	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R238	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R240	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R241	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R243	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R244	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R245	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R250	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R251	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R252	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R253	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R254	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R257	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R258	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R261	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R262	1-216-817-11	s	RESISTOR,CHIP 470 1/16W 1608
R263	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R265	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R267	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R290	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R291	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R292	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R293	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R300	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R301	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R302	1-216-797-11	s	RESISTOR,CHIP 10 1/16W 1608
R303	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R304	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R306	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R307	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R390	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R391	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R392	1-216-805-11	s	RESISTOR,CHIP 47 1/16W 1608
R393	1-216-805-11	s	RESISTOR,CHIP 47 1/16W 1608
R394	1-216-821-11	s	RESISTOR,CHIP 1.0K 1/16W(1608)
R395	1-216-821-11	s	RESISTOR,CHIP 1.0K 1/16W(1608)
R396	1-216-821-11	s	RESISTOR,CHIP 1.0K 1/16W(1608)

Ref. No. or Q'ty	Part No.	SP	Description
R397	1-216-821-11	s	RESISTOR,CHIP 1.0K 1/16W(1608)
R401	1-211-975-11	s	RESISTOR,CHIP 18 1/16W (1608)
R402	1-211-987-11	s	RESISTOR,CHIP 56 1/16W (1608)
R403	1-216-839-11	s	RESISTOR,CHIP 33K 1/16W 1608
R404	1-216-841-11	s	RESISTOR, CHIP 47K 1/16W 1608
R405	1-218-843-11	s	RESISTOR,CHIP 680 1/16W (1608)
R406	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R407	1-211-975-11	s	RESISTOR,CHIP 18 1/16W (1608)
R408	1-211-987-11	s	RESISTOR,CHIP 56 1/16W (1608)
R409	1-216-839-11	s	RESISTOR,CHIP 33K 1/16W 1608
R410	1-216-841-11	s	RESISTOR, CHIP 47K 1/16W 1608
R411	1-218-843-11	s	RESISTOR,CHIP 680 1/16W (1608)
R412	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R413	1-211-975-11	s	RESISTOR,CHIP 18 1/16W (1608)
R414	1-211-987-11	s	RESISTOR,CHIP 56 1/16W (1608)
R415	1-216-839-11	s	RESISTOR,CHIP 33K 1/16W 1608
R416	1-216-841-11	s	RESISTOR, CHIP 47K 1/16W 1608
R417	1-218-843-11	s	RESISTOR,CHIP 680 1/16W (1608)
R418	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R419	1-211-975-11	s	RESISTOR,CHIP 18 1/16W (1608)
R420	1-211-987-11	s	RESISTOR,CHIP 56 1/16W (1608)
R421	1-216-839-11	s	RESISTOR,CHIP 33K 1/16W 1608
R422	1-216-841-11	s	RESISTOR, CHIP 47K 1/16W 1608
R423	1-218-843-11	s	RESISTOR,CHIP 680 1/16W (1608)
R424	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R425	1-211-975-11	s	RESISTOR,CHIP 18 1/16W (1608)
R426	1-211-987-11	s	RESISTOR,CHIP 56 1/16W (1608)
R427	1-216-839-11	s	RESISTOR,CHIP 33K 1/16W 1608
R428	1-216-841-11	s	RESISTOR, CHIP 47K 1/16W 1608
R429	1-218-843-11	s	RESISTOR,CHIP 680 1/16W (1608)
R430	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R431	1-211-975-11	s	RESISTOR,CHIP 18 1/16W (1608)
R432	1-211-987-11	s	RESISTOR,CHIP 56 1/16W (1608)
R433	1-216-839-11	s	RESISTOR,CHIP 33K 1/16W 1608
R434	1-216-841-11	s	RESISTOR, CHIP 47K 1/16W 1608
R435	1-218-843-11	s	RESISTOR,CHIP 680 1/16W (1608)
R436	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R438	1-211-969-11	s	RESISTOR,CHIP 10 1/16W (1608)
R440	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R441	1-218-841-11	s	RESISTOR,CHIP 560 1/16W (1608)
R442	1-218-841-11	s	RESISTOR,CHIP 560 1/16W (1608)
R443	1-218-841-11	s	RESISTOR,CHIP 560 1/16W (1608)
R444	1-218-841-11	s	RESISTOR,CHIP 560 1/16W (1608)
R445	1-218-841-11	s	RESISTOR,CHIP 560 1/16W (1608)
R446	1-218-841-11	s	RESISTOR,CHIP 560 1/16W (1608)
R447	1-216-817-11	s	RESISTOR,CHIP 470 1/16W 1608
R448	1-211-991-11	s	RESISTOR,CHIP 82 1/16W (1608)
R450	1-218-857-11	s	RESISTOR,CHIP 2.7K 1/16W(1608)
R451	1-218-830-11	s	RESISTOR,CHIP 200 1/16W (1608)
R452	1-218-830-11	s	RESISTOR,CHIP 200 1/16W (1608)
R453	1-218-830-11	s	RESISTOR,CHIP 200 1/16W (1608)
R454	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R455	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R456	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R457	1-218-855-11	s	RESISTOR,CHIP 2.2K 1/16W(1608)
R458	1-218-855-11	s	RESISTOR,CHIP 2.2K 1/16W(1608)
R459	1-218-855-11	s	RESISTOR,CHIP 2.2K 1/16W(1608)
R460	1-218-865-11	s	RESISTOR,CHIP 5.6K 1/16W(1608)
R461	1-218-865-11	s	RESISTOR,CHIP 5.6K 1/16W(1608)

Ref. No. or Q'ty	Part No.	SP	Description
R462	1-218-865-11	s	RESISTOR,CHIP 5.6K 1/16W(1608)
R463	1-218-855-11	s	RESISTOR,CHIP 2.2K 1/16W(1608)
R464	1-218-855-11	s	RESISTOR,CHIP 2.2K 1/16W(1608)
R465	1-216-825-11	s	RESISTOR,CHIP 2.2K 1/16W 1608
R466	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R467	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R468	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R469	1-218-285-11	s	RESISTOR,CHIP 75 1/16W (1608)
R470	1-218-285-11	s	RESISTOR,CHIP 75 1/16W (1608)
R471	1-218-285-11	s	RESISTOR,CHIP 75 1/16W (1608)
R472	1-218-855-11	s	RESISTOR,CHIP 2.2K 1/16W(1608)
R473	1-218-853-11	s	RESISTOR,CHIP 1.8K 1/16W(1608)
R474	1-218-855-11	s	RESISTOR,CHIP 2.2K 1/16W(1608)
R475	1-218-853-11	s	RESISTOR,CHIP 1.8K 1/16W(1608)
R477	1-216-817-11	s	RESISTOR,CHIP 470 1/16W 1608
R478	1-211-991-11	s	RESISTOR,CHIP 82 1/16W (1608)
R479	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R480	1-218-857-11	s	RESISTOR,CHIP 2.7K 1/16W(1608)
R481	1-218-830-11	s	RESISTOR,CHIP 200 1/16W (1608)
R482	1-218-830-11	s	RESISTOR,CHIP 200 1/16W (1608)
R483	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R484	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R485	1-218-855-11	s	RESISTOR,CHIP 2.2K 1/16W(1608)
R486	1-218-855-11	s	RESISTOR,CHIP 2.2K 1/16W(1608)
R487	1-218-865-11	s	RESISTOR,CHIP 5.6K 1/16W(1608)
R488	1-218-865-11	s	RESISTOR,CHIP 5.6K 1/16W(1608)
R489	1-216-825-11	s	RESISTOR,CHIP 2.2K 1/16W 1608
R490	1-218-855-11	s	RESISTOR,CHIP 2.2K 1/16W(1608)
R491	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R492	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R493	1-218-285-11	s	RESISTOR,CHIP 75 1/16W (1608)
R494	1-218-285-11	s	RESISTOR,CHIP 75 1/16W (1608)
R495	1-218-841-11	s	RESISTOR,CHIP 560 1/16W (1608)
R496	1-218-841-11	s	RESISTOR,CHIP 560 1/16W (1608)
R497	1-218-841-11	s	RESISTOR,CHIP 560 1/16W (1608)
R498	1-218-841-11	s	RESISTOR,CHIP 560 1/16W (1608)
R499	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R500	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R501	1-216-797-11	s	RESISTOR,CHIP 10 1/16W 1608
R502	1-216-827-11	s	RESISTOR, CHIP 3.3K 1/16W 1608
R503	1-216-827-11	s	RESISTOR, CHIP 3.3K 1/16W 1608
R504	1-216-818-11	s	RESISTOR, CHIP 560 1/16W 1608
R505	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R506	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R507	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R508	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R509	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R510	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R511	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R512	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R513	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R514	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R515	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R516	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R517	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R518	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R519	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R520	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R521	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)

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Ref. No. or Q’ty	Part No.	SP	Description
R522	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R523	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R524	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R525	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R526	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R527	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R528	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R529	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R530	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R531	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R532	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R533	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R534	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R535	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R536	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R537	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R538	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R539	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R540	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R541	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R542	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R543	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R545	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R550	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R551	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R552	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R553	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R554	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R555	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R600	1-216-831-11	s	RESISTOR,CHIP 6.8K 1/16W(1608)
R601	1-216-817-11	s	RESISTOR,CHIP 470 1/16W 1608
R602	1-216-831-11	s	RESISTOR,CHIP 6.8K 1/16W(1608)
R603	1-216-835-11	s	RESISTOR,CHIP 15K 1/16W
R604	1-218-857-11	s	RESISTOR,CHIP 2.7K 1/16W(1608)
R605	1-218-879-11	s	RESISTOR,CHIP 22K 1/16W (1608)
R606	1-216-838-11	s	RESISTOR CHIP 27K 1/16W(1608)
R607	1-216-835-11	s	RESISTOR,CHIP 15K 1/16W
R608	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R609	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R610	1-216-817-11	s	RESISTOR,CHIP 470 1/16W 1608
R611	1-216-835-11	s	RESISTOR,CHIP 15K 1/16W
R612	1-218-857-11	s	RESISTOR,CHIP 2.7K 1/16W(1608)
R613	1-218-879-11	s	RESISTOR,CHIP 22K 1/16W (1608)
R614	1-218-895-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R615	1-218-895-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R616	1-218-895-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R617	1-216-835-11	s	RESISTOR,CHIP 15K 1/16W
R618	1-216-817-11	s	RESISTOR,CHIP 470 1/16W 1608
R619	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R620	1-218-857-11	s	RESISTOR,CHIP 2.7K 1/16W(1608)
R621	1-218-883-11	s	RESISTOR,CHIP 33K 1/16W (1608)
R622	1-216-836-11	s	RESISTOR, CHIP 18K 1/16W 1608
R623	1-216-838-11	s	RESISTOR CHIP 27K 1/16W(1608)
R624	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R625	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R626	1-216-849-11	s	RESISTOR,CHIP 220K 1/16W 1608
R627	1-216-849-11	s	RESISTOR,CHIP 220K 1/16W 1608
R628	1-216-817-11	s	RESISTOR,CHIP 470 1/16W 1608
R629	1-218-895-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R630	1-218-895-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R631	1-218-891-11	s	RESISTOR,CHIP 68K 1/16W (1608)
R632	1-218-895-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R633	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R634	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R635	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R636	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R637	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R638	1-217-671-11	s	RESISTOR CHIP 1 1/10W(2125)
R639	1-216-821-11	s	RESISTOR,CHIP 1.0K 1/16W(1608)
R640	1-216-841-11	s	RESISTOR, CHIP 47K 1/16W 1608
R641	1-218-895-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R642	1-218-895-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R643	1-216-805-11	s	RESISTOR,CHIP 47 1/16W 1608
R644	1-216-805-11	s	RESISTOR,CHIP 47 1/16W 1608
R645	1-216-805-11	s	RESISTOR,CHIP 47 1/16W 1608
R646	1-216-805-11	s	RESISTOR,CHIP 47 1/16W 1608
R647	1-216-805-11	s	RESISTOR,CHIP 47 1/16W 1608
R648	1-216-805-11	s	RESISTOR,CHIP 47 1/16W 1608
R649	1-216-847-11	s	RESISTOR, CHIP 150K 1/16W 1608
R650	1-218-887-11	s	RESISTOR,CHIP 47K 1/16W (1608)
R651	1-216-841-11	s	RESISTOR, CHIP 47K 1/16W 1608
R652	1-218-895-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R653	1-218-891-11	s	RESISTOR,CHIP 68K 1/16W (1608)
R654	1-218-853-11	s	RESISTOR,CHIP 1.8K 1/16W(1608)
R655	1-218-853-11	s	RESISTOR,CHIP 1.8K 1/16W(1608)
R656	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R657	1-218-895-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R658	1-218-895-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R659	1-216-817-11	s	RESISTOR,CHIP 470 1/16W 1608
R660	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R661	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R662	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R663	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R664	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R665	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R666	1-218-883-11	s	RESISTOR,CHIP 33K 1/16W (1608)
R667	1-218-899-11	s	RESISTOR,CHIP 150K 1/16W(1608)
R668	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R669	1-218-883-11	s	RESISTOR,CHIP 33K 1/16W (1608)
R670	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R671	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R672	1-216-841-11	s	RESISTOR, CHIP 47K 1/16W 1608
R673	1-216-841-11	s	RESISTOR, CHIP 47K 1/16W 1608
R674	1-216-841-11	s	RESISTOR, CHIP 47K 1/16W 1608
R675	1-216-841-11	s	RESISTOR, CHIP 47K 1/16W 1608
R676	1-216-841-11	s	RESISTOR, CHIP 47K 1/16W 1608
R677	1-216-817-11	s	RESISTOR,CHIP 470 1/16W 1608
R680	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R681	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R682	1-216-841-11	s	RESISTOR, CHIP 47K 1/16W 1608
R683	1-216-017-91	s	RESISTOR, CHIP 47 1/10W(2012)
R684	1-216-849-11	s	RESISTOR,CHIP 220K 1/16W 1608
R685	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R750	1-216-829-11	s	RESISTOR,CHIP 4.7K 1/16W(1608)
R751	1-216-805-11	s	RESISTOR,CHIP 47 1/16W 1608
R752	1-216-805-11	s	RESISTOR,CHIP 47 1/16W 1608
R753	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R754	1-216-805-11	s	RESISTOR,CHIP 47 1/16W 1608

(MA-107/107P BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R755	1-216-805-11	s	RESISTOR,CHIP 47 1/16W 1608
R756	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R757	1-216-805-11	s	RESISTOR,CHIP 47 1/16W 1608
R758	1-216-805-11	s	RESISTOR,CHIP 47 1/16W 1608
R759	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R760	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R761	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R762	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R763	1-216-805-11	s	RESISTOR,CHIP 47 1/16W 1608
R764	1-216-805-11	s	RESISTOR,CHIP 47 1/16W 1608
R765	1-216-805-11	s	RESISTOR,CHIP 47 1/16W 1608
R766	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R780 ⚠	1-218-233-11	s	RESISTOR,CHIP 47 1/2W (4532)
R782	1-216-813-11	s	RESISTOR, CHIP 220 1/16W 1608
R783	1-216-813-11	s	RESISTOR, CHIP 220 1/16W 1608
R784	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R785	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R786	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R787	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R788	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R789	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R792	1-216-801-11	s	RESISTOR,CHIP 22 1/16W (1608)
R794	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R795	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R800	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R801	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R802	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R803	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R804	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R805	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R806	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R807	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R808	1-211-969-11	s	RESISTOR,CHIP 10 1/16W (1608)
R809	1-211-978-11	s	RESISTOR,CHIP 24 1/16W (1608)
R810	1-211-969-11	s	RESISTOR,CHIP 10 1/16W (1608)
R811	1-211-978-11	s	RESISTOR,CHIP 24 1/16W (1608)
R812	1-218-856-11	s	RESISTOR,CHIP 2.4K 1/16W(1608)
R813	1-218-856-11	s	RESISTOR,CHIP 2.4K 1/16W(1608)
R815	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R816	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R817	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R818	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R819	1-216-845-11	s	RESISTOR,CHIP 100K 1/16W(1608)
R820	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R821	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R900	1-219-611-21	s	RESISTOR, CHIP 0.047 1W
R901	1-219-611-21	s	RESISTOR, CHIP 0.047 1W
R902	1-219-796-11	s	RESISTOR, CHIP(SQUARE)0.025 1W
R903	1-216-839-11	s	RESISTOR,CHIP 33K 1/16W 1608
R904	1-216-841-11	s	RESISTOR, CHIP 47K 1/16W 1608
R905	1-216-839-11	s	RESISTOR,CHIP 33K 1/16W 1608
R906	1-218-847-11	s	RESISTOR, CHIP 1K 1/16W (1608)
R907	1-219-796-11	s	RESISTOR, CHIP(SQUARE)0.025 1W
R908	1-216-841-11	s	RESISTOR, CHIP 47K 1/16W 1608
R909	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R910	1-216-857-11	s	RESISTOR,CHIP 1M 1/16W(1608)
R911	1-216-853-11	s	RESISTOR,CHIP 470K 1/16W(1608)
R912	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R913	1-216-813-11	s	RESISTOR, CHIP 220 1/16W 1608
R914	1-216-857-11	s	RESISTOR,CHIP 1M 1/16W(1608)
R915	1-216-853-11	s	RESISTOR,CHIP 470K 1/16W(1608)
R916	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R917	1-216-817-11	s	RESISTOR,CHIP 470 1/16W 1608
R918	1-216-839-11	s	RESISTOR,CHIP 33K 1/16W 1608
R919	1-216-841-11	s	RESISTOR, CHIP 47K 1/16W 1608
R920	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R921	1-216-833-11	s	RESISTOR,CHIP 10K 1/16W (1608)
R922	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R923	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R925	1-216-864-11	s	RESISTOR,CHIP 0 1/16W (1608)
R926	1-216-825-11	s	RESISTOR,CHIP 2.2K 1/16W 1608
R927	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R928	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
R929	1-216-809-11	s	RESISTOR,CHIP 100 1/16W 1608
RB100	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB101	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB102	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB103	1-239-621-11	s	NETWORK RESISTOR 22 (1608)
RB104	1-239-621-11	s	NETWORK RESISTOR 22 (1608)
RB105	1-239-621-11	s	NETWORK RESISTOR 22 (1608)
RB106	1-239-621-11	s	NETWORK RESISTOR 22 (1608)
RB107	1-239-621-11	s	NETWORK RESISTOR 22 (1608)
RB108	1-239-621-11	s	NETWORK RESISTOR 22 (1608)
RB109	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB110	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB111	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB112	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB113	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB114	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB115	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB116	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB117	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB118	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB119	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB120	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB121	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB122	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB123	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB124	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB125	1-239-621-11	s	NETWORK RESISTOR 22 (1608)
RB126	1-239-621-11	s	NETWORK RESISTOR 22 (1608)
RB200	1-239-286-11	s	RESISTOR,NETWORK 22K (1608)
RB250	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB251	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB252	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB253	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB254	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB255	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB256	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB257	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB258	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB259	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB260	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB261	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB262	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB263	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB300	1-239-412-11	s	NETWORK, RESISTOR 100 (1608)
RB301	1-239-412-11	s	NETWORK, RESISTOR 100 (1608)

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Ref. No. or Q'ty	Part No.	SP	Description
RB302	1-239-412-11	s	NETWORK, RESISTOR 100 (1608)
RB303	1-239-412-11	s	NETWORK, RESISTOR 100 (1608)
RB305	1-239-621-11	s	NETWORK RESISTOR 22 (1608)
RB306	1-239-621-11	s	NETWORK RESISTOR 22 (1608)
RB307	1-239-621-11	s	NETWORK RESISTOR 22 (1608)
RB308	1-239-621-11	s	NETWORK RESISTOR 22 (1608)
RB309	1-239-621-11	s	NETWORK RESISTOR 22 (1608)
RB310	1-239-621-11	s	NETWORK RESISTOR 22 (1608)
RB311	1-239-621-11	s	NETWORK RESISTOR 22 (1608)
RB313	1-239-621-11	s	NETWORK RESISTOR 22 (1608)
RB314	1-239-621-11	s	NETWORK RESISTOR 22 (1608)
RB315	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB316	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB390	1-239-621-11	s	NETWORK RESISTOR 22 (1608)
RB451	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB452	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB481	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB482	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB521	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB522	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB523	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB524	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB525	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB529	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB531	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB532	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB533	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB534	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB535	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB540	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB541	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB542	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB543	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB544	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB545	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB546	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB547	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB548	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB549	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB550	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB570	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB571	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB572	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB573	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
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RB575	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB576	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB577	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB578	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB579	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB750	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB751	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB752	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB753	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB754	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB755	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB800	1-236-907-11	s	RESISTOR BLOCK 100K (1608)
RB801	1-236-907-11	s	RESISTOR BLOCK 100K (1608)
RB802	1-236-907-11	s	RESISTOR BLOCK 100K (1608)
RB803	1-236-907-11	s	RESISTOR BLOCK 100K (1608)
RB804	1-236-907-11	s	RESISTOR BLOCK 100K (1608)
RB805	1-236-907-11	s	RESISTOR BLOCK 100K (1608)
RB806	1-236-907-11	s	RESISTOR BLOCK 100K (1608)
RB807	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB808	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB809	1-236-908-11	s	RESISTOR,NETWORK 10K (3216)
RB810	1-236-907-11	s	RESISTOR BLOCK 100K (1608)
S900	⚠ 1-771-762-11	s	SWITCH, POWER
T800	⚠ 1-435-820-21	s	TRANSFORMER, INPUT/OUTPUT
X100	1-781-108-11	s	OSCILLATOR, CRYSTAL (32MHZ)
X101	1-760-622-21	s	VIBRATOR, CRYSTAL
X230	1-781-345-11	s	OSCILLATOR, CRYSTAL
X390	1-781-561-11	s	OSCILLATOR, CRYSTAL
X400	1-767-399-11	s	VIBRATOR, CRYSTAL
X510	1-795-138-11	s	OSCILLATOR, CRYSTAL
X750	1-760-557-11	o	VIBRATOR, CRYSTAL
X780	1-579-477-21	s	VIBRATOR, CRYSTAL

RX-47A BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8327-098-A	o	MOUNTED CIRCUIT BOARD, RX-47A
C451	1-126-396-11	s	CAPACITOR,ELECT 47MF/16V(CHIP)
C452	1-164-156-11	s	CAPACITOR,CERAMIC 0.1MF/25V F
C453	1-126-395-11	s	CAPACITOR,ELECT 22MF/16V(CHIP)
CN404	1-691-513-11	s	CONNECTOR,BOARD TO BOARD 12P
IC451	8-748-031-08	s	RAY CATCHER ELEMENT SBX8031-H
IC452	8-759-082-55	s	IC TC7W00FU
R451	1-216-805-11	s	RESISTOR,CHIP 47 1/16W 1608

FRAME

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-791-486-11	s	CABLE, FLAT (WHITH SHIELD) (FROM CN902/MA-107 BOARD TO CN101/DE-55 BOARD)
1pc	1-791-487-11	s	CABLE, FLAT (WHITH SHIELD) (FROM CN701/IPM-92A BOARD TO CN403/DE-55 BOARD)
1pc	1-791-488-11	s	CABLE, FLAT (WHITH SHIELD) (FROM CN801/IPM-93A BOARD TO CN402/DE-55 BOARD)
1pc	1-959-950-11	s	HARNESS, SUB (CAM) (FROM CAMERA TO CN901/MA-107 BOARD)

6-4. Packing Materials & Supplied Accessories

PCS-1600/1600P

Ref. No. or Q'ty	Part No.	SP	Description
1pc	⚠ 1-418-560-11	s	ADAPTOR, AC
2pcs	1-467-685-21	s	REPEATER, IR
1pc	1-476-461-12	s	REMOTE COMMANDER [for CE/UC]
1pc	1-476-461-22	s	REMOTE COMMANDER [for J]
1pc	⚠ 1-551-812-11	s	CORD,POWER [for UC]
1pc	1-695-531-11	s	ADAPTOR, CONVERSION [for CE]
1pc	1-751-416-11	s	CORD, YC CONNECTION
1pc	1-765-258-31	s	CORD, CONNECTION
1pc	⚠ 1-783-969-11	s	CORD,POWER [for J]
1pc	1-791-181-11	s	CORD, CONNECTION (ISDN CORD)
1pc	3-205-055-01	s	MANUAL, INSTRUCTION [for J]
1pc	3-205-055-11	s	MANUAL, INSTRUCTION [for UC]
1pc	3-205-055-21	s	MANUAL, INSTRUCTION [for UC]
2pcs	3-622-608-01	s	SHEET A,FIXED (PP)

PCS-P160P

Ref. No. or Q'ty	Part No.	SP	Description
1pc	⚠ 1-782-929-11	s	CORD,POWER (BS 3P)
1pc	3-205-055-11	s	MANUAL, INSTRUCTION
1pc	3-205-055-21	s	MANUAL, INSTRUCTION
1pc	3-205-055-31	s	MANUAL, INSTRUCTION

PCS-I160/I161

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-791-181-21	s	CORD, CONNECTION (ISDN CORD) [for PCS-I160]
1pc	1-791-181-31	s	CORD, CONNECTION (ISDN CORD) [for PCS-I160]
2pcs	7-682-546-09	s	SCREW +B3X5

Section 7
Board Layouts

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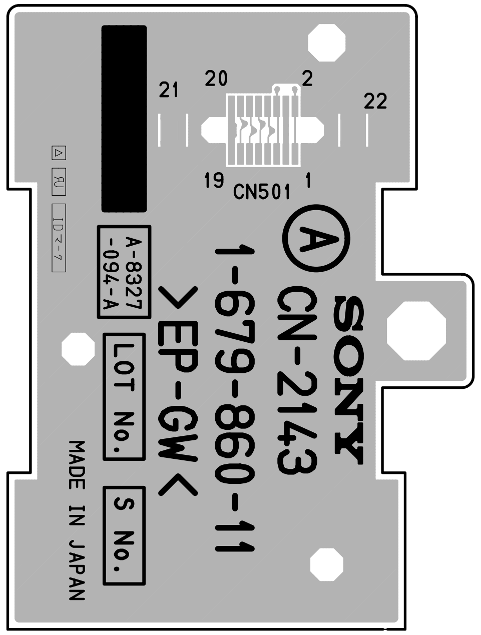
* Option board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SONY
CN-2143
1-679-860-11
>EP-GW<
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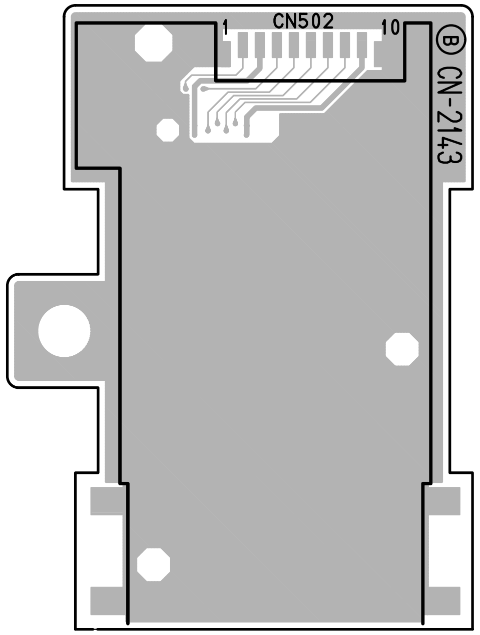
-094-A
LOT No.
S No.
MADE IN JAPAN

CN-2143 -A SIDE-
SUFFIX: -11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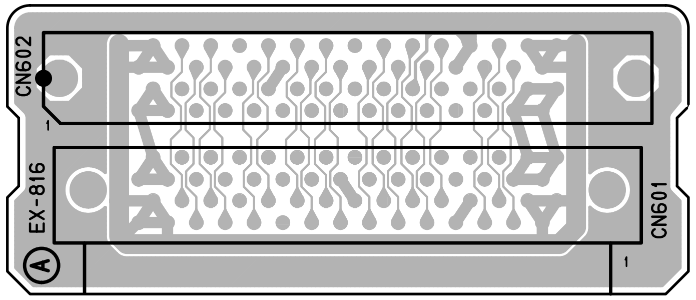
CN-2143

CN-2143 -B SIDE-
SUFFIX: -11


CN602
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EX-816
A
CN601
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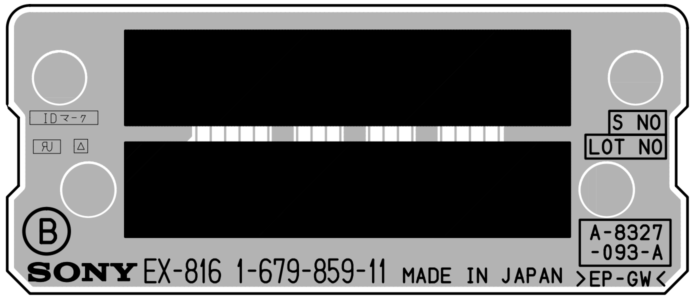
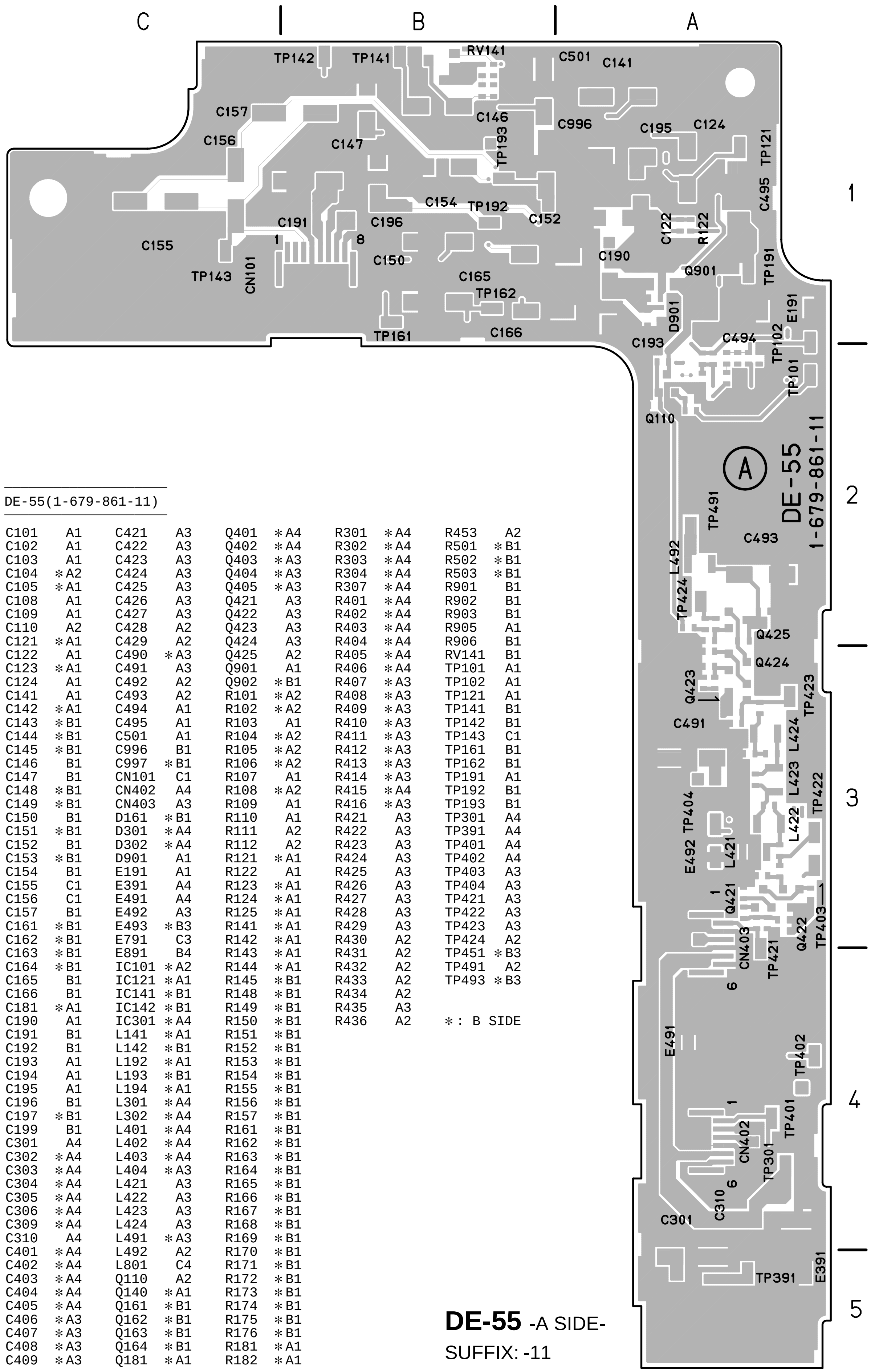
EX-816 -A SIDE-
SUFFIX: -11


S NO
LOT NO
A-8327
-093-A
B
SONY
EX-816 1-679-859-11
MADE IN JAPAN
>EP-GW<

EX-816 -B SIDE-
SUFFIX: -11


C
B
A
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TP142
TP141
RV141
C501
C141
C157
C156
C146
C996
C147
C195
C124
TP193
TP121
C154
TP192
C152
C495
C191
C196
C122
R122
C155
1
8
C150
C190
TP143
CN101
C165
Q901
TP191
TP162
D901
E191
TP161
C166
C193
C494
TP102
TP101
Q110
Ⓐ
DE-55
1-679-861-11
TP491
C493
L492
TP424
Q425
Q424
Q423
TP423
C491
L424
L423
TP422
TP404
L422
E492
L421
1
Q421
TP403
CN403
Q422
6
TP421
E491
TP402
1
CN402
TP401
6
TP301
C310
C301
E391
TP391

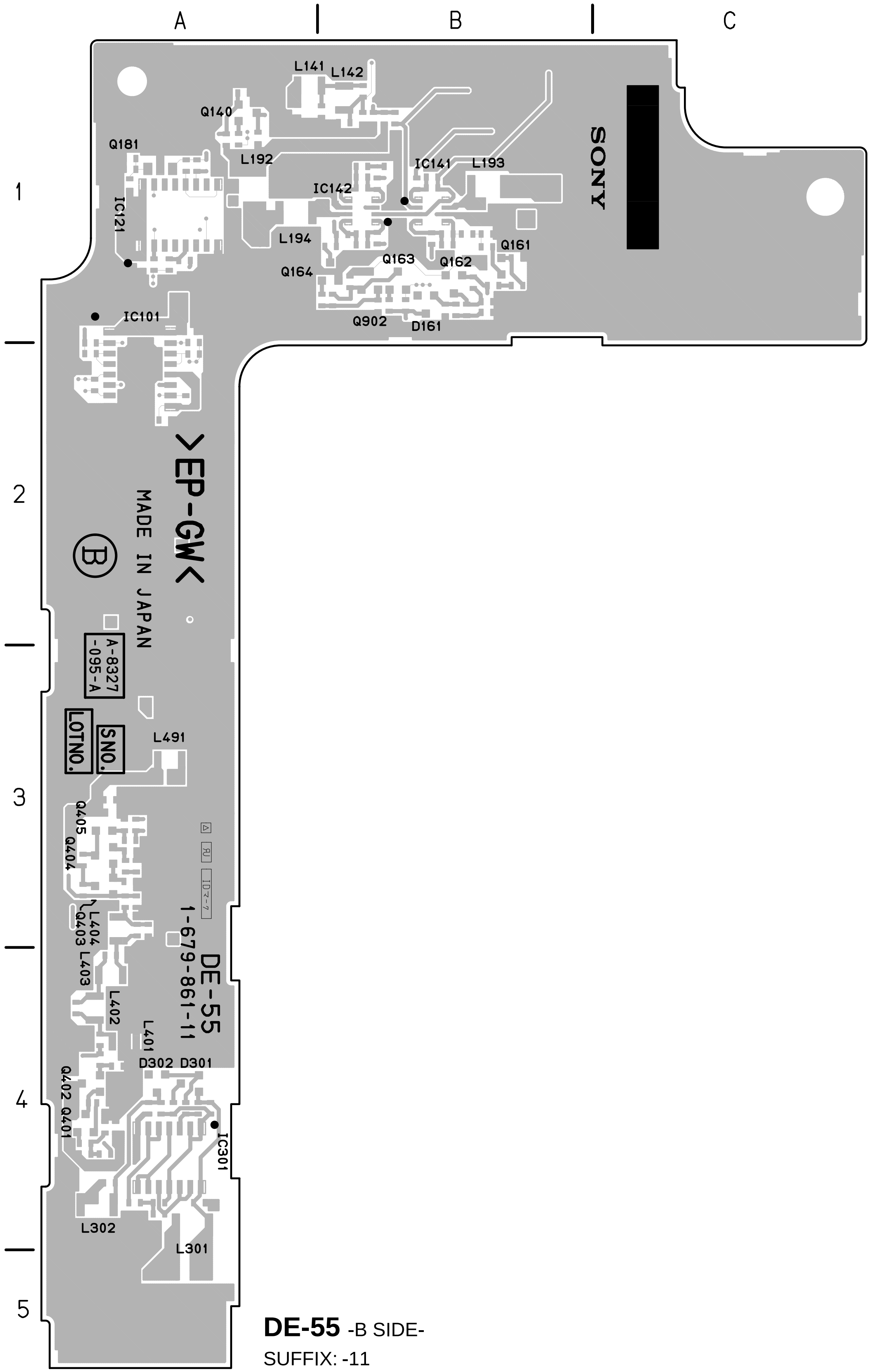
DE-55 -A SIDE-

SUFFIX: -11

DE-55(1-679-861-11)

C101	A1	C421	A3	Q401	*A4	R301	*A4	R453	A2
C102	A1	C422	A3	Q402	*A4	R302	*A4	R501	*B1
C103	A1	C423	A3	Q403	*A3	R303	*A4	R502	*B1
C104	*A2	C424	A3	Q404	*A3	R304	*A4	R503	*B1
C105	*A1	C425	A3	Q405	*A3	R307	*A4	R901	B1
C108	A1	C426	A3	Q421	A3	R401	*A4	R902	B1
C109	A1	C427	A3	Q422	A3	R402	*A4	R903	B1
C110	A2	C428	A2	Q423	A3	R403	*A4	R905	A1
C121	*A1	C429	A2	Q424	A3	R404	*A4	R906	B1
C122	A1	C490	*A3	Q425	A2	R405	*A4	RV141	B1
C123	*A1	C491	A3	Q901	A1	R406	*A4	TP101	A1
C124	A1	C492	A2	Q902	*B1	R407	*A3	TP102	A1
C141	A1	C493	A2	R101	*A2	R408	*A3	TP121	A1
C142	*A1	C494	A1	R102	*A2	R409	*A3	TP141	B1
C143	*B1	C495	A1	R103	A1	R410	*A3	TP142	B1
C144	*B1	C501	A1	R104	*A2	R411	*A3	TP143	C1
C145	*B1	C996	B1	R105	*A2	R412	*A3	TP161	B1
C146	B1	C997	*B1	R106	*A2	R413	*A3	TP162	B1
C147	B1	CN101	C1	R107	A1	R414	*A3	TP191	A1
C148	*B1	CN402	A4	R108	*A2	R415	*A4	TP192	B1
C149	*B1	CN403	A3	R109	A1	R416	*A3	TP193	B1
C150	B1	D161	*B1	R110	A1	R421	A3	TP301	A4
C151	*B1	D301	*A4	R111	A2	R422	A3	TP391	A4
C152	B1	D302	*A4	R112	A2	R423	A3	TP401	A4
C153	*B1	D901	A1	R121	*A1	R424	A3	TP402	A4
C154	B1	E191	A1	R122	A1	R425	A3	TP403	A3
C155	C1	E391	A4	R123	*A1	R426	A3	TP404	A3
C156	C1	E491	A4	R124	*A1	R427	A3	TP421	A3
C157	B1	E492	A3	R125	*A1	R428	A3	TP422	A3
C161	*B1	E493	*B3	R141	*A1	R429	A3	TP423	A3
C162	*B1	E791	C3	R142	*A1	R430	A2	TP424	A2
C163	*B1	E891	B4	R143	*A1	R431	A2	TP451	*B3
C164	*B1	IC101	*A2	R144	*A1	R432	A2	TP491	A2
C165	B1	IC121	*A1	R145	*B1	R433	A2	TP493	*B3
C166	B1	IC141	*B1	R148	*B1	R434	A2		
C181	*A1	IC142	*B1	R149	*B1	R435	A3		
C190	A1	IC301	*A4	R150	*B1	R436	A2		
C191	B1	L141	*A1	R151	*B1				
C192	B1	L142	*B1	R152	*B1				
C193	A1	L192	*A1	R153	*B1				
C194	A1	L193	*B1	R154	*B1				
C195	A1	L194	*A1	R155	*B1				
C196	B1	L301	*A4	R156	*B1				
C197	*B1	L302	*A4	R157	*B1				
C199	B1	L401	*A4	R161	*B1				
C301	A4	L402	*A4	R162	*B1				
C302	*A4	L403	*A4	R163	*B1				
C303	*A4	L404	*A3	R164	*B1				
C304	*A4	L421	A3	R165	*B1				
C305	*A4	L422	A3	R166	*B1				
C306	*A4	L423	A3	R167	*B1				
C309	*A4	L424	A3	R168	*B1				
C310	A4	L491	*A3	R169	*B1				
C401	*A4	L492	A2	R170	*B1				
C402	*A4	L801	C4	R171	*B1				
C403	*A4	Q110	A2	R172	*B1				
C404	*A4	Q140	*A1	R173	*B1				
C405	*A4	Q161	*B1	R174	*B1				
C406	*A3	Q162	*B1	R175	*B1				
C407	*A3	Q163	*B1	R176	*B1				
C408	*A3	Q164	*B1	R181	*A1				
C409	*A3	Q181	*A1	R182	*A1				

*: B SIDE


A
B
C
1
2
3
4
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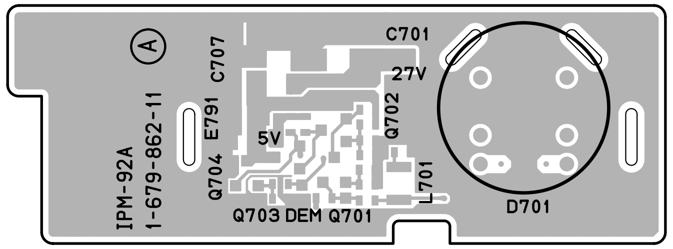
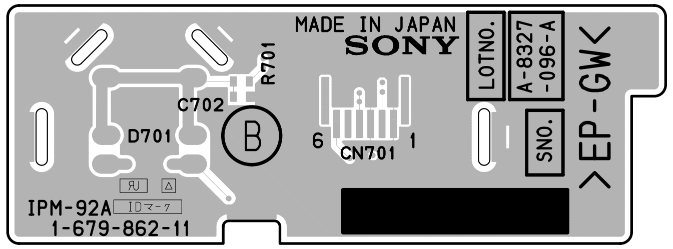
L141
L142
Q140
Q181
L192
SONY
IC141
L193
IC142
IC121
L194
Q161
Q163
Q162
Q164
IC101
Q902
D161
>EP-GW<
MADE IN JAPAN
Ⓑ
A-8327
-095-A
LOTNO.
SNO.
L491
Q405
Q404
L404
Q403
L403
DE-55
1-679-861-11
L402
L401
D302
D301
Q402
Q401
IC301
L302
L301

DE-55 -B SIDE-

SUFFIX: -11


A
IPM-92A
1-679-862-11
C707
E791
Q704
C701
27V
5V
Q702
L701
Q703 DEM Q701
D701

IPM-92A -A SIDE-
SUFFIX: -11


MADE IN JAPAN
SONY
LOTNO.
A-8327
-096-A
R701
C702
B
D701
6
CN701
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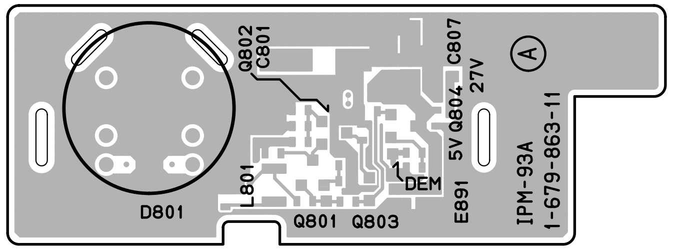
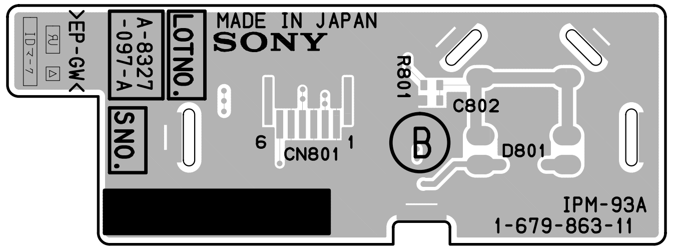
SNO.
>EP-GW<
IPM-92A
1-679-862-11

IPM-92A -B SIDE-
SUFFIX: -11


Q802
C801
C807
27V
A
Q804
5V
1
DEM
L801
D801
Q801
Q803
E891
IPM-93A
1-679-863-11

IPM-93A -A SIDE-
SUFFIX: -11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A-8327
-097-A
LOTNO.
MADE IN JAPAN
SONY
R801
C802
SNO.
6
CN801
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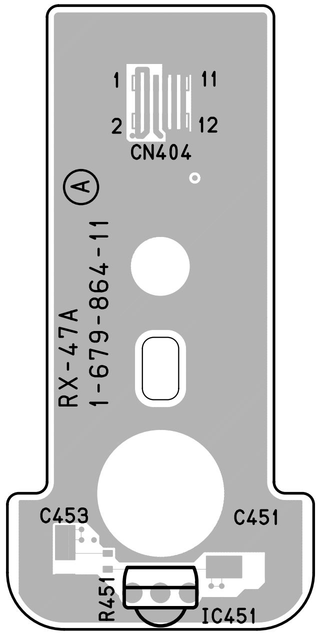
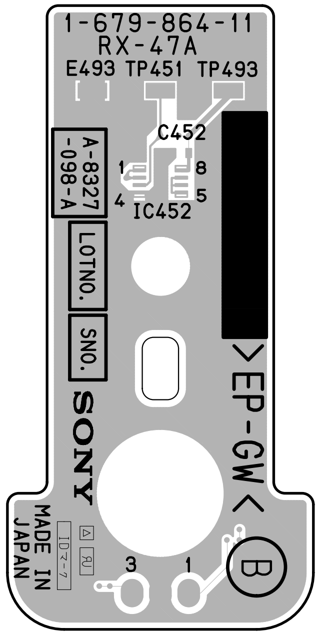
B
D801
IPM-93A
1-679-863-11

IPM-93A -B SIDE-
SUFFIX: -11


1
11
2
12
CN404
A
RX-47A
1-679-864-11
C453
C451
R451
IC451

RX-47A -A SIDE-
SUFFIX: -11


1-679-864-11
RX-47A
E493 TP451 TP493
C452
A-8327
-098-A
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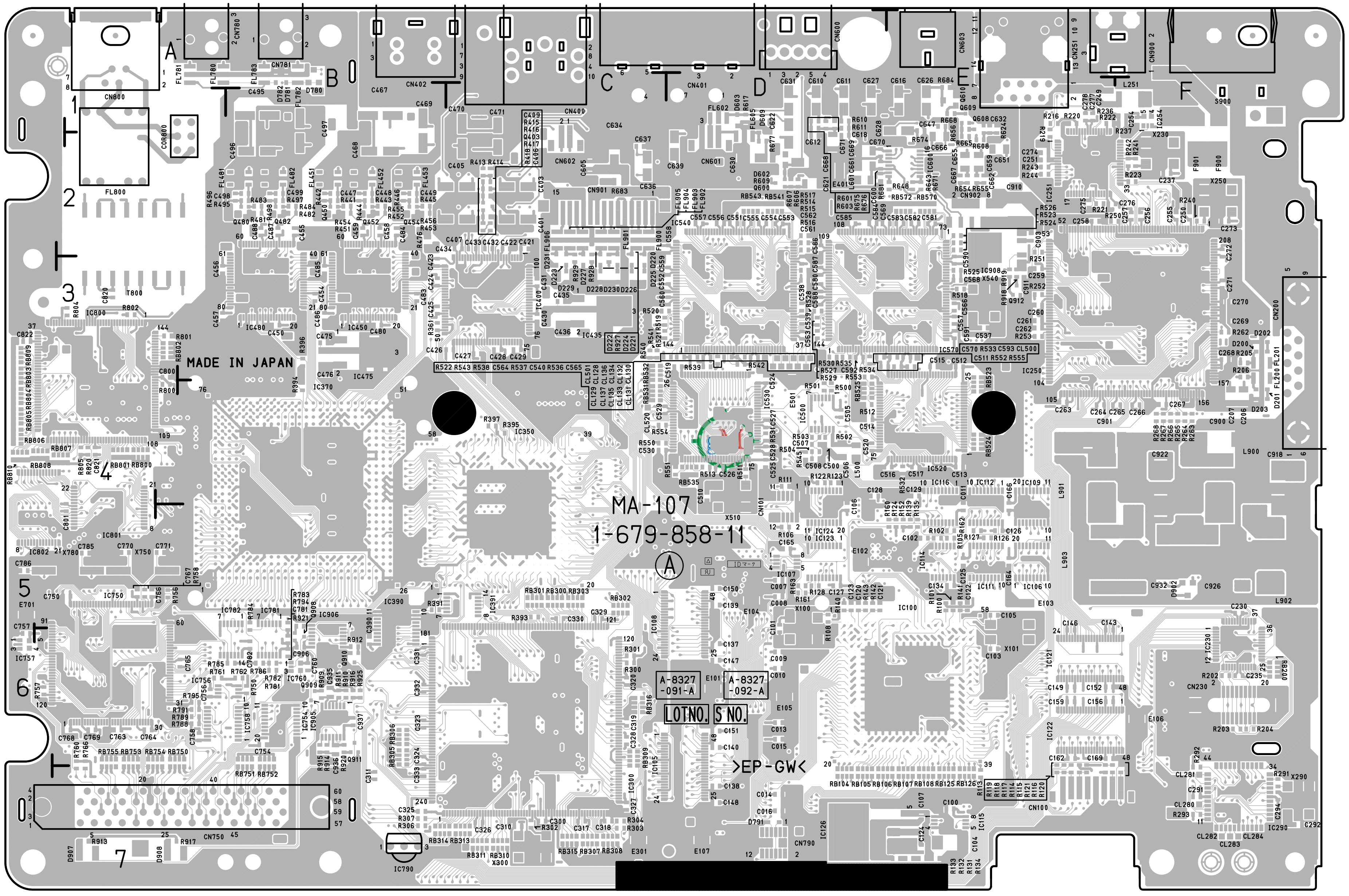
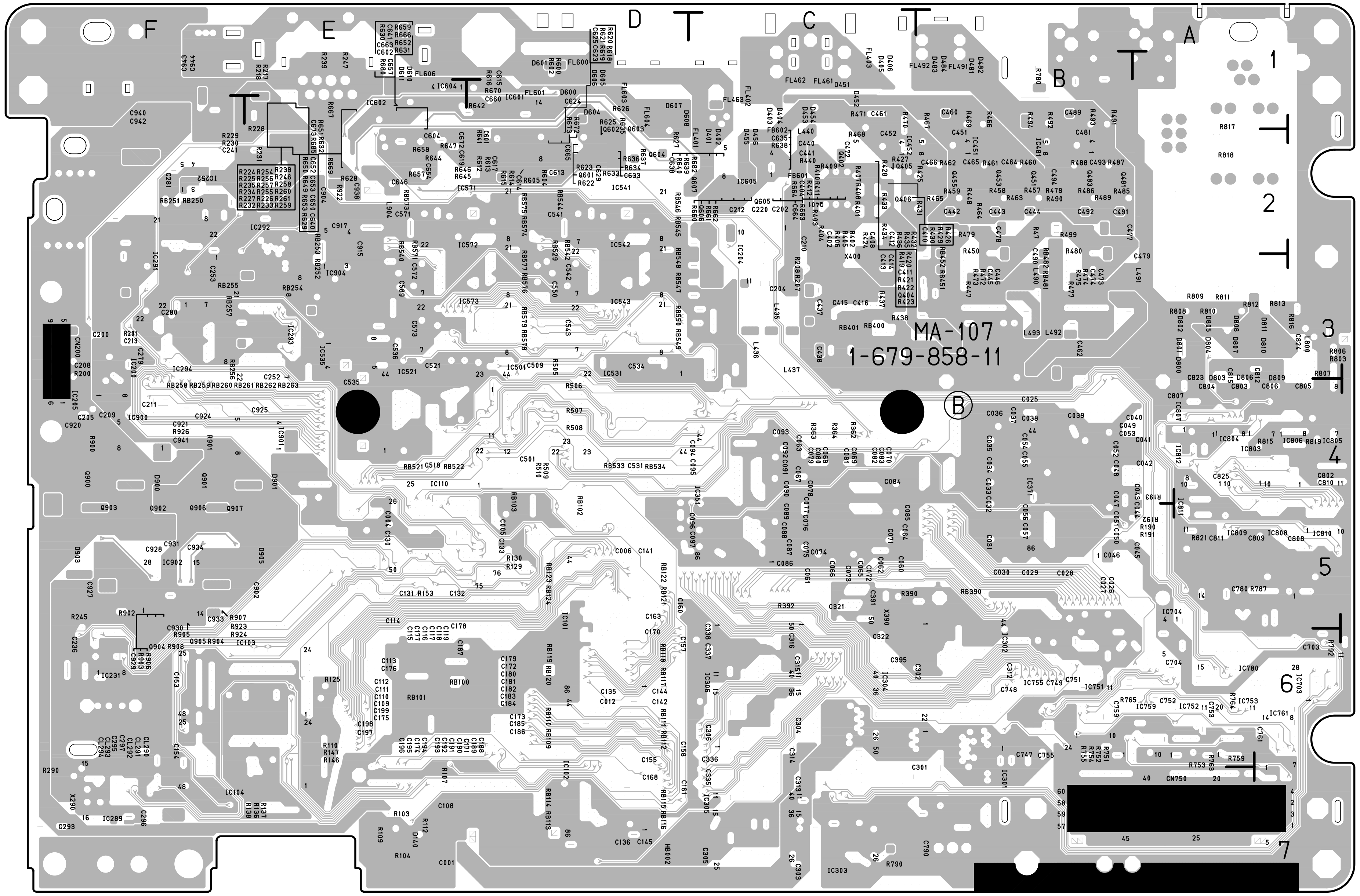
8
4
5
IC452
LOTNO.
SNO.
SONY
>EP-GW<
MADE IN
JAPAN
3
1
B

RX-47A -B SIDE-
SUFFIX: -11


MADE IN JAPAN
MA-107
1-679-858-11
A-8327
-091-A
A-8327
-092-A
LOTNO.
S NO.
>EP-GW<
A
B
C
D
E
F
1
2
3
4
5
6
7

MA-107/107P -A SIDE-

SUFFIX: -11, -12


MA-107
1-679-858-11
A
B
C
D
E
F
1
2
3
4
5
6
7

MA-107/107P -B SIDE-

SUFFIX: -11, -12

MA-107(1-679-858-11)

C001	＊E7
C004	＊E5
C005	＊D5
C006	＊D5
C007	D5
C008	D5
C009	D6
C010	D6
C011	E5
C012	＊D6
C013	D6
C014	D7
C015	D6
C016	D7
C025	＊B4
C026	＊B5
C027	＊B5
C028	＊B5
C029	＊B5
C030	＊B5
C031	＊B5
C032	＊B4
C033	＊B4
C034	＊B4
C035	＊B4
C036	＊B4
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C038	＊B4
C039	＊B4
C040	＊B4
C041	＊B4
C042	＊B4
C043	＊A4
C044	＊A5
C045	＊A5
C046	＊B5
C047	＊B4
C048	＊B4
C049	＊B4
C050	＊B5
C051	＊B5
C052	＊B4
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C082	＊C4
C083	＊C4
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C086	＊C5
C087	＊C5
C088	＊C5
C089	＊C5
C090	＊C4
C091	＊C4
C092	＊C4
C093	＊C4
C094	＊C4
C095	＊C4
C096	＊C5
C097	＊C5
C100	E7
C101	D5
C102	E5
C103	E6
C104	E7
C105	E5
C106	D5
C107	E7
C108	＊E7
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C113	＊E6
C114	＊E5
C115	＊E6
C116	＊E6
C117	＊E6
C118	＊E6
C119	＊E6
C120	D5
C121	D5
C122	E5
C123	D5
C124	E7
C125	E5
C126	E5
C127	D5
C128	D4
C129	E4
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C131	＊E5
C132	＊E5
C133	＊D5
C134	E5
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C137	D6
C138	D7
C139	D5
C140	D6
C141	＊D5
C142	＊D6
C143	E6
C144	＊D6
C145	＊D7
C146	E6
C147	D6
C148	D7
C149	E6
C150	D5
C151	D6
C152	E6
C153	＊F6
C154	＊F6
C155	＊D6
C156	E6
C157	＊C6
C158	＊C6
C159	E6
C160	＊C5
C161	＊C7
C162	E6
C163	＊D5
C164	E5
C165	D5
C166	E5
C168	＊D7
C169	E6
C170	＊D6
C171	＊D6
C172	＊D6
C173	＊D6
C174	＊E6
C175	＊E6
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C181	＊D6
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C183	＊D6
C184	＊D6
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C188	＊D6
C189	＊D6
C190	＊E6
C191	＊E6
C192	＊E6
C193	＊E6
C194	＊E6
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C204	＊C3
C205	＊F4
C206	F4
C207	F4
C208	＊F4
C209	＊F4
C210	＊C2
C211	＊F4
C212	＊C2
C213	＊F3
C220	＊C2
C230	F5
C235	F6
C236	＊F6
C237	F2
C241	＊E2
C249	E1
C250	F2
C251	E2
C252	＊E3
C253	＊F3
C254	F1
C255	F2
C256	F2
C257	F2
C258	E2
C259	E3
C260	E3
C261	E3
C262	E3
C263	E4
C264	E4
C265	F4
C266	F4
C267	F4
C268	F3
C269	F3
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C273	F2
C274	E2
C275	E2
C276	E2
C277	E1
C278	E1
C279	＊F3
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C281	＊F2
C291	F7
C292	F7
C293	＊F7
C294	F7
C295	＊F6
C296	＊F7
C297	＊F6
C300	C7
C301	＊B7
C302	＊B6
C303	＊C7
C304	＊C6
C305	＊C7
C306	＊C6
C310	C7
C311	B7
C312	＊B6
C313	＊C7
C314	＊C6
C315	＊C6
C316	＊C6
C317	C7
C318	C7
C319	C6
C320	C6
C321	＊C5
C322	＊C5
C323	B6
C324	B6
C325	B7
C326	C7
C327	C7
C328	C6
C329	C5
C330	C5
C331	B6
C332	B6
C333	B7
C335	＊C7
C336	＊C6
C337	＊C6
C338	＊C6
C390	B6
C391	＊C5
C395	＊C6
C401	C2
C402	＊C2
C403	C2
C404	＊C2
C405	C2
C406	C2
C407	C2
C408	＊C2
C409	C2
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C412	＊C2
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C445	＊B3
C446	＊B3
C447	B2
C448	B2
C449	B2
C450	B3
C451	＊B2
C452	＊C2
C454	B3
C455	B2
C456	B3
C457	B3
C458	B2
C459	B2
C460	＊B1
C461	＊C1
C462	＊B3
C464	＊B2
C465	＊B2
C466	＊B2
C467	B1
C468	B2
C469	B1
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C472	＊C2
C473	＊B3
C474	＊B3
C475	B3
C476	B3
C477	＊B2
C478	＊B2
C479	＊B2
C480	B3
C481	＊B2
C483	B3
C484	B2
C485	B3
C486	B3
C487	B2
C488	B2
C489	＊B1
C490	＊B2
C491	＊B2
C492	＊B2
C493	＊B2
C494	＊B2
C495	B1
C496	B2
C497	B1
C498	B2
C499	B2
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C513	E4
C514	D4
C515	E3
C516	E4
C517	E4
C518	＊E4
C519	D3
C520	D4
C521	＊E3
C524	D3
C525	D4
C526	D4
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C529	D4
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C531	＊D4
C534	＊D3
C535	＊E3
C536	＊E3
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C538	D3
C539	D3
C540	D3
C541	＊D2
C542	＊D3
C543	＊D3
C550	＊D3
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C566	E3
C567	E3
C568	E3
C569	E2
C570	D3
C571	＊E2
C572	＊E3
C573	＊E3
C580	D3
C581	E2
C582	E2
C583	E2
C584	D2
C585	D2
C586	D2
C587	D3
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C592	D3
C593	E3
C600	D2
C601	＊D2
C602	＊E2
C604	＊E2
C605	C2
C610	D1
C611	D1
C612	D2
C613	＊D2
C614	＊D2
C615	＊D1
C616	E1
C617	＊D2
C618	D2
C619	＊D2
C621	D2
C622	D2
C623	＊D1
C624	＊D1
C625	＊D1
C626	E1
C627	D1
C628	E1
C629	＊D2
C630	D2
C631	D1
C632	E1
C633	＊D2
C634	C2
C635	＊C2
C636	C2
C637	C2
C638	＊C2
C639	D2
C640	＊E2
C641	＊E1
C646	＊E2
C647	E1
C650	＊E2
C651	E2
C652	＊E1
C653	＊E2
C654	＊E2
C655	E2
C657	＊E2
C659	E2
C660	＊D1
C661	D2
C662	E2
C663	＊E2
C664	＊C2
C665	＊D2
C666	E2
C667	E2
C668	D2
C669	D2
C670	D2
C671	D2
C672	＊D1
C673	＊E2
C703	＊A6
C704	＊A6
C747	＊B6
C748	＊B6
C749	＊B6
C750	A5
C751	＊B6
C752	＊A6
C753	＊A6
C754	B6
C755	＊B6
C756	A6
C757	A6
C758	A6
C759	＊B6
C760	B6
C761	＊A6
C763	A6
C764	A6
C765	A6
C766	A5
C767	A5
C768	A6
C769	A6
C770	A5
C771	A5
C780	＊A5
C781	B6
C782	B6
C785	A5
C786	A5
C790	＊B7
C800	A3
C801	A5
C802	＊A4
C803	＊A4
C804	＊A4
C805	＊A4
C806	＊A4
C807	＊A4
C808	＊A5
C809	＊A5
C810	＊A4
C811	＊A5
C812	＊A3
C815	＊A3
C820	A3
C821	A4
C822	A3
C823	＊A3
C824	＊A3
C825	＊A4
C900	F4
C901	E4
C902	＊E5
C903	E2
C904	＊E2
C906	B6
C910	E2
C911	E3
C915	＊E2
C917	＊E2
C918	F4
C920	＊F4
C921	＊F4
C922	F4
C924	＊F4
C925	＊E4
C926	F5
C927	＊F5
C928	＊F5
C929	＊F5
C930	＊F5
C931	＊F5
C932	F5
C933	＊F5
C934	＊F5
C935	B6
C936	B6
C937	B6
C938	＊E2
C940	＊F1
C941	＊F4
C942	＊F1
C943	＊F1
C944	＊F1
CN100	F7
CN101	D4
CN200	F4
CN230	F6
CN251	E1
CN400	C1
CN401	D1
CN402	B1
CN600	D1
CN601	D1
CN602	C1
CN603	E1
CN750	A7
CN780	A1
CN781	B1
CN790	D7
CN800	A1
CN900	F1
CN901	C2
CN902	E2
COR800	A2
D140	＊E7
D200	F3
D201	F4
D202	F3
D203	F4
D220	C3
D221	C3
D222	C3
D223	C3
D224	C3
D225	C3
D226	C3
D227	C3
D228	C3
D229	C3
D230	C3
D231	C3
D401	＊C1
D402	＊C1
D403	＊C1
D404	＊C1
D405	＊C1
D406	＊C1
D451	＊C1
D452	＊C1
D453	＊C1
D454	＊C1
D455	＊C1
D456	＊C1
D481	＊B1
D482	＊B1
D483	＊B1
D484	＊B1
D600	＊D1
D601	＊D1
D602	D2
D603	D1
D604	＊D1
D605	＊D1
D606	＊D1
D607	＊D1
D608	＊D1
D609	D2
D610	＊E1
D611	＊E1
D780	B1
D781	B1
D782	B1
D791	D7
D800	＊A3
D801	＊A3
D802	＊A3
D803	＊A3
D804	＊A3
D805	＊A3
D806	＊A3
D807	＊A3
D808	＊A3
D809	＊A3
D810	＊A3
D811	＊A3
D900	＊F4
D901	＊E4
D902	F5
D903	＊F5
D905	＊E5
D907	A7
D908	A7
E104	D6
E105	D5
E106	E5
E107	D5
E108	D6
E109	F6
E110	D7
E304	C7
E401	D2
E501	D4
E701	A5
F900	F2
F901	F2
FB601	＊C2
FB602	＊C2
FL200	F3
FL201	F3
FL401	＊C1
FL402	＊C1
FL403	＊C1
FL451	B2
FL452	B2
FL453	B2
FL461	＊C1
FL462	＊C1
FL463	＊C1
FL481	B2
FL482	B2
FL491	＊B1
FL492	＊B1
FL600	＊D1
FL601	＊D1
FL602	D1
FL603	＊D1
FL604	＊D1
FL605	D2
FL606	＊E1
FL780	B1
FL781	A1
FL782	B1
FL783	B1
FL800	A1
FL900	C2
FL901	C2
FL902	C2
FL903	C2
FL904	C2
FL905	C2
FL906	C2
IC100	E6
IC101	＊D5
IC102	＊D6
IC103	＊E6
IC104	＊E6
IC105	D6
IC106	E5
IC107	D5
IC108	D5
IC109	E5
IC110	＊E5
IC111	E5
IC112	E5
IC114	E5
IC115	E7
IC116	E5
IC121	E6
IC122	E6
IC123	D5
IC124	D5
IC126	D7
IC200	＊F3
IC204	＊C2
IC205	＊F4
IC230	F6
IC231	＊F6
IC250	F3
IC251	E2
IC252	＊F2
IC254	F1
IC289	＊F7
IC290	F7
IC291	＊F3
IC292	＊E2
IC293	＊E3
IC294	＊F3
IC300	C6
IC301	＊B7
IC302	＊B6
IC303	＊C7
IC304	＊C6
IC305	＊C7
IC306	＊C6
IC350	C5
IC351	＊C4
IC370	B4
IC371	＊B4
IC390	B5
IC391	C5
IC400	C3
IC435	C3
IC450	B3
IC451	＊B2
IC452	＊C2
IC475	B3
IC480	B3
IC481	＊B2
IC500	D4
IC501	＊D4
IC520	E4
IC521	＊E4
IC530	D4
IC531	＊D4
IC535	＊E3
IC540	D3
IC541	＊D2
IC542	＊D3
IC543	＊D3
IC570	E3
IC571	＊D2
IC572	＊D3
IC573	＊D3
IC600	E2
IC601	＊D2
IC602	＊E2
IC604	＊E1
IC605	＊C2
IC703	＊A6
IC704	＊A6
IC750	A6
IC751	＊B6
IC752	＊A6
IC753	＊A6
IC754	B6
IC755	＊B6
IC756	B6
IC757	A6
IC758	B6
IC759	＊A6
IC760	B6
IC761	＊A6
IC780	＊A6
IC781	B6
IC782	B6
IC790	B7
IC800	A4
IC801	A5
IC802	A5
IC803	＊A4
IC804	＊A4
IC805	＊A4
IC806	＊A4
IC807	＊A4
IC808	＊A5
IC809	＊A5
IC810	＊A5
IC811	＊A5
IC812	＊A4
IC900	＊F4
IC901	＊E4
IC902	＊F5
IC904	＊E2
IC905	B6
IC906	B6
IC908	E2
L251	F1
L435	＊C3
L436	＊C3
L437	＊C3
L440	＊C1
L490	＊B3
L491	＊B3
L492	＊B3
L493	＊B3
L500	D4
L601	D2
L800	＊A3
L900	F4
L901	E4
L902	F5
L903	E5
L904	＊E2
Q401	＊C2
Q402	＊C2
Q403	C2
Q404	＊C2
Q405	＊C2
Q406	＊C2
Q450	B2
Q451	＊B2
Q452	B2
Q453	＊B2
Q454	B2
Q455	＊B2
Q480	B2
Q481	＊B2
Q482	B2
Q483	＊B2
Q600	D2
Q601	＊D2
Q602	＊D2
Q603	＊D2
Q604	＊D2
Q605	＊C2
Q606	＊C2
Q607	＊C2
Q608	E1
Q609	E1
Q610	E1
Q900	＊F4
Q901	＊F4
Q902	＊F5
Q903	＊F5
Q904	＊F6
Q905	＊F6
Q906	＊F5
Q907	＊E5
Q908	B6
Q909	B6
Q910	B6
Q911	B6
Q912	E3
R047	＊B2
R100	E5
R101	E5
R102	E5
R103	＊E7
R104	＊E7
R105	E5
R106	D5
R107	＊E6
R108	D5
R109	＊E7
R110	＊E6
R111	D4
R112	＊E7
R113	E7
R114	E7
R115	E7
R116	F7
R117	E7
R118	E7
R119	E7
R120	F7
R121	E7
R122	D4
R123	D4
R124	E5
R125	＊E6
R126	E5
R127	E5
R128	D5
R129	＊D5
R130	＊D5
R131	E7
R132	E7
R133	E7
R134	E7
R135	E5
R136	＊E7
R137	＊E7
R138	＊E7
R139	E5
R140	D5
R141	E5
R142	D5
R143	D5
R146	＊E6
R147	＊E6
R152	E5
R153	＊E5
R160	E5
R161	D5
R162	E5
R163	D5
R190	＊A5
R191	＊A5
R192	＊A5
R193	＊A4
R200	＊F4
R201	＊F3
R202	F6
R203	F6
R204	F6
R205	F3
R206	F3
R207	＊C3
R208	＊C3
R216	E1
R217	＊E1
R218	＊E1
R219	E2
R220	E1
R221	E2
R222	E1
R223	F2
R224	＊E1
R225	＊E1
R226	＊E2
R227	＊E2
R228	＊E2
R229	＊E2
R230	＊E2
R231	＊E2
R232	＊E2
R233	＊E2
R234	＊E1
R235	＊E1
R236	F1
R237	F1
R238	＊E1
R239	＊E1
R240	F2
R241	F2
R242	F2
R243	E2
R244	E2
R245	＊F5
R246	＊E1
R247	＊E1
R250	F2
R251	E2
R252	E3
R253	E3
R254	＊E1
R255	＊E1
R256	＊E1
R257	＊E1
R258	＊E1
R259	＊E2
R260	＊E2
R261	＊E2
R262	F3
R263	F4
R264	F4
R265	F4
R266	F4
R267	F4
R268	F4
R290	＊F7
R291	F7
R292	F6
R293	F7
R300	C6
R301	C6
R302	C7
R303	C7
R304	C7
R306	B7
R307	B7
R361	B3
R362	＊C4
R363	＊C4
R364	＊C4
R390	＊C5
R391	B5
R392	＊C5
R393	C5
R394	B4
R395	C4
R396	B3
R397	C4
R401	＊C2
R402	＊C2
R403	＊C2
R404	＊C2
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R406	＊C2
R407	＊C2
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R412	＊C2
R413	C2
R414	C2
R415	C2
R416	C2
R417	C2
R418	C2
R419	＊C2
R420	＊C2
R421	＊C2
R422	＊C2
R423	＊C2
R424	＊C2
R425	＊B2
R426	＊B2
R427	＊C2
R428	＊C2
R429	＊C2
R430	＊C2
R431	＊B2
R432	＊B2
R433	＊C2
R434	＊C2
R435	＊C2
R436	＊C2
R437	＊C3
R438	＊C3
R440	＊C2
R441	B2
R442	B2
R443	B2
R444	B2
R445	B2
R446	B2
R447	＊B3
R448	＊B2
R450	＊B3
R451	B2
R452	B2
R453	B2
R454	B2
R455	B2
R456	B2
R457	＊B2
R458	＊B2
R459	＊B2
R460	＊B2
R461	＊B2
R462	＊B2
R463	＊B2
R464	＊B2
R465	＊B2
R466	＊B1
R467	＊B1
R468	＊C1
R469	＊B1
R470	＊B1
R471	＊C1
R472	＊B3
R473	＊B3
R474	＊B3
R475	＊B3
R476	B2
R477	＊B3
R478	＊B2
R479	＊B2
R480	＊B3
R481	B2
R482	B2
R483	B2
R484	B2
R485	＊B2
R486	＊B2
R487	＊B2
R488	＊B2
R489	＊B2
R490	＊B2
R491	＊B1
R492	＊B1
R493	＊B1
R494	＊B1
R495	B2
R496	B2
R497	B2
R498	B2
R499	＊B2
R500	D4
R501	D4
R502	D4
R503	D4
R504	D4
R505	＊D3
R506	＊D4
R507	＊D4
R508	＊D4
R509	＊D4
R510	＊D4
R511	D4
R512	D4
R513	D4
R514	D2
R515	D2
R516	D3
R517	D2
R518	E3
R519	D3
R520	D3
R521	D3
R522	D3
R523	E2
R524	E2
R525	E3
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R527	D3
R528	D3
R529	D3
R530	D3
R531	D4
R532	E4
R533	E3
R534	D3
R535	D3
R536	D3
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R539	D3
R540	C3
R541	C3
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R543	D3
R545	D4
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R553	D3
R554	D4
R555	E3
R600	＊D1
R601	D1
R602	＊D1
R603	D1
R604	＊D2
R605	＊D2
R606	D2
R607	D2
R608	E2
R609	D2
R610	D1
R611	D1
R612	＊D2
R613	＊D2
R614	＊D2
R615	＊D2
R616	＊D1
R617	D1
R618	＊D1
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R620	＊D1
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R625	＊D2
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R630	＊E1
R631	＊E2
R632	＊E2
R633	＊D2
R634	＊D2
R635	＊D2
R636	＊D2
R637	＊D2
R638	＊C2
R639	＊C2
R640	＊C2
R641	＊D1
R642	＊D1
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R645	＊E2
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R648	E2
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R657	＊E2
R658	＊E2
R659	＊E1
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R663	＊C2
R664	＊C2
R665	E2
R666	＊E1
R667	＊E1
R668	E1
R669	＊E2
R670	＊D1
R671	E2
R672	＊D2
R673	＊D2
R674	E1
R675	D1
R676	D1
R677	D2
R680	＊E2
R681	D2
R682	＊C2
R683	C2
R684	E1
R685	＊E2
R750	B6
R751	＊B6
R752	＊B6
R753	＊A6
R754	＊B6
R755	＊B6
R756	A5
R757	A6
R758	A5
R759	＊A6
R760	A6
R761	A6
R762	B6
R763	＊A6
R764	＊A6
R765	＊B6
R766	A6
R780	＊B1
R781	B6
R782	B6
R783	B5
R784	B5
R785	B6
R786	B6
R787	＊A5
R788	A6
R789	A6
R790	＊C7
R791	A6
R792	＊A6
R794	B6
R795	A6
R800	A4
R801	A3
R802	A3
R803	＊A3
R804	A3
R805	A4
R806	＊A3
R807	＊A3
R808	＊A3
R809	＊A3
R810	＊A3
R811	＊A3
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R816	＊A3
R817	＊A2
R818	＊A2
R819	＊A4
R820	A4
R821	＊A5
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R901	＊F4
R902	＊F5
R903	＊F5
R904	＊F6
R905	＊F5
R906	＊F5
R907	＊F5
R908	＊F6
R909	B6
R910	B6
R911	B6
R912	B6
R913	A7
R914	B6
R915	B6
R916	B6
R917	A7
R918	E3
R919	E3
R920	B6
R921	B5
R922	＊E2
R923	＊F5
R924	＊F6
R925	B6
R926	＊F4
R927	C3
R928	C3
R929	C3
RB100	＊E6
RB101	＊E6
RB102	＊D5
RB103	＊D4
RB104	D7
RB105	D7
RB106	E7
RB107	E7
RB108	E7
RB109	＊D6
RB110	＊D6
RB111	＊D6
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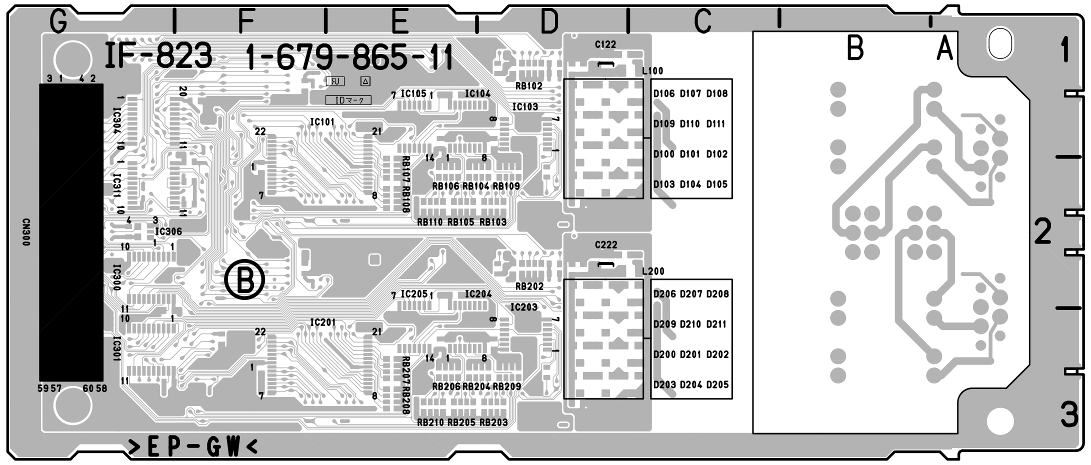
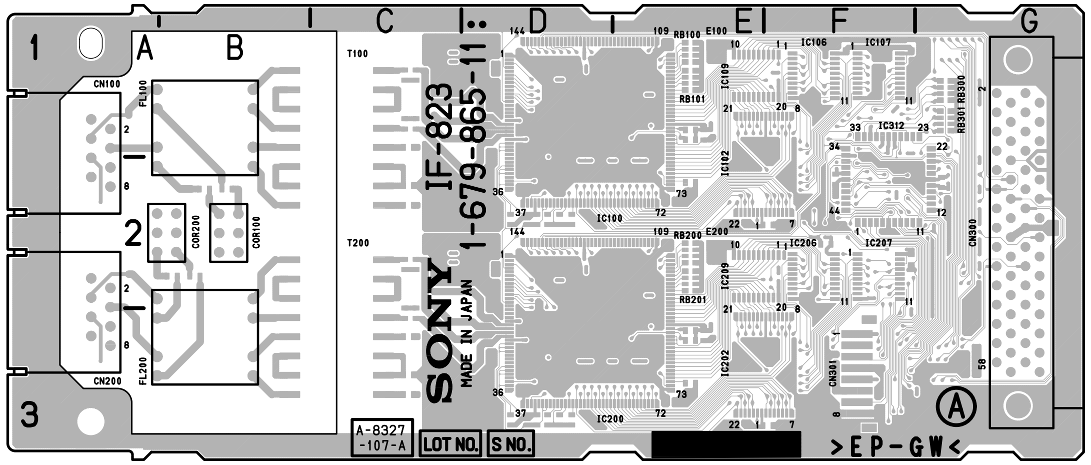
RB115	＊D7
RB116	＊D7
RB117	＊D6
RB118	＊D6
RB119	＊D6
RB120	＊D6
RB121	＊D5
RB122	＊D5
RB123	＊D5
RB124	＊D5
RB125	E7
RB126	E7
RB200	F6
RB250	＊F2
RB251	＊F2
RB252	＊E3
RB253	＊E2
RB254	＊E3
RB255	＊E3
RB256	＊F3
RB257	＊F3
RB258	＊F4
RB259	＊F4
RB260	＊F4
RB261	＊E4
RB262	＊E4
RB263	＊E4
RB300	C5
RB301	C5
RB302	C5
RB303	C5
RB305	B6
RB306	B6
RB307	C7
RB308	C7
RB309	C6
RB310	C7
RB311	C7
RB313	C7
RB314	C7
RB315	C7
RB316	C6
RB390	＊B5
RB400	＊C3
RB401	＊C3
RB451	＊B3
RB452	＊B3
RB481	＊B3
RB482	＊B3
RB521	＊E4
RB522	＊E4
RB523	E4
RB524	E4
RB525	D4
RB529	＊D2
RB531	C4
RB532	C3
RB533	＊D4
RB534	＊D4
RB535	D4
RB540	＊E2
RB541	D2
RB542	＊D2
RB543	D2
RB544	＊D2
RB545	＊D2
RB546	＊D2
RB547	＊D3
RB548	＊D3
RB549	＊D3
RB550	＊D3
RB570	E2
RB571	＊E2
RB572	E2
RB573	＊E2
RB574	＊D2
RB575	＊D2
RB576	＊D3
RB577	＊D3
RB578	＊D3
RB579	＊D3
RB750	A6
RB751	B6
RB752	B6
RB753	A6
RB754	A6
RB755	A6
RB800	A4
RB801	A4
RB802	A3
RB803	A3
RB804	A4
RB805	A4
RB806	A4
RB807	A4
RB808	A4
RB809	A3
RB810	A4
S900	F1
T800	A2
X100	D5
X101	E6
X230	F2
X250	F2
X290	＊F7
X291	F7
X300	C7
X390	＊C5
X400	＊C3
X510	D4
X540	E3
X750	A5
X780	A5

＊: B SIDE


G F E D C B A
IF-823 1-679-865-11
1
2
3
B
>EP-GW<
CN300
IC301
IC300
IC306
IC311
IC304
IC101
IC105
IC104
IC103
IC201
IC205
IC204
IC203
RB102
RB202
C122
C222
L100
L200
D106 D107 D108
D109 D110 D111
D100 D101 D102
D103 D104 D105
D206 D207 D208
D209 D210 D211
D200 D201 D202
D203 D204 D205
RB106 RB104 RB109
RB110 RB105 RB103
RB206 RB204 RB209
RB210 RB205 RB203

IF-823 -B SIDE-

SUFFIX: -11


1 A B C D E F G
2
3
IF-823
1-679-865-11
SONY
MADE IN JAPAN
CN100
CN200
FL100
FL200
COR200
COR100
T100
T200
IC100
IC200
IC102
IC109
IC209
IC202
IC106
IC107
IC206
IC207
IC312
RB100
RB101
RB200
RB201
RB301 RB300
E100
E200
CN300
CN301
A
A-8327
-107-A
LOT NO.
S NO.
>EP-GW<

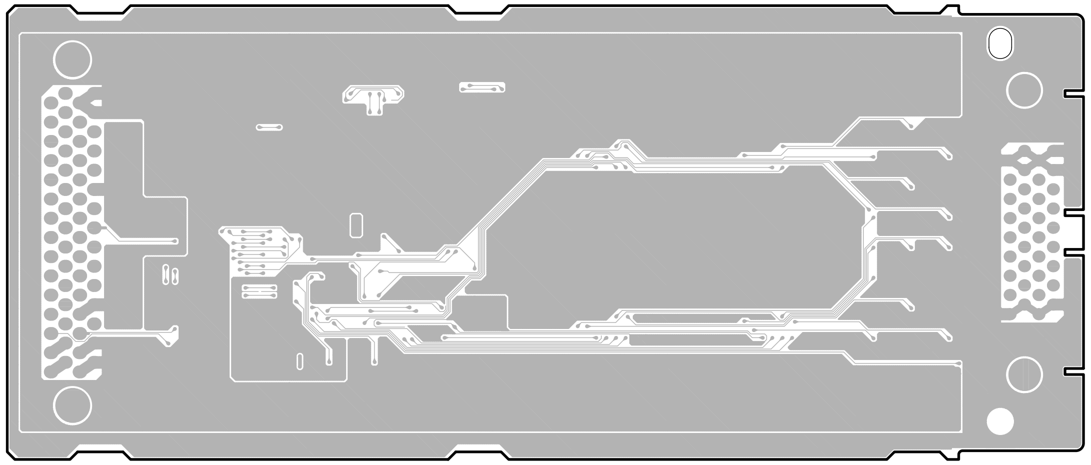
IF-823 -A SIDE-

SUFFIX: -11

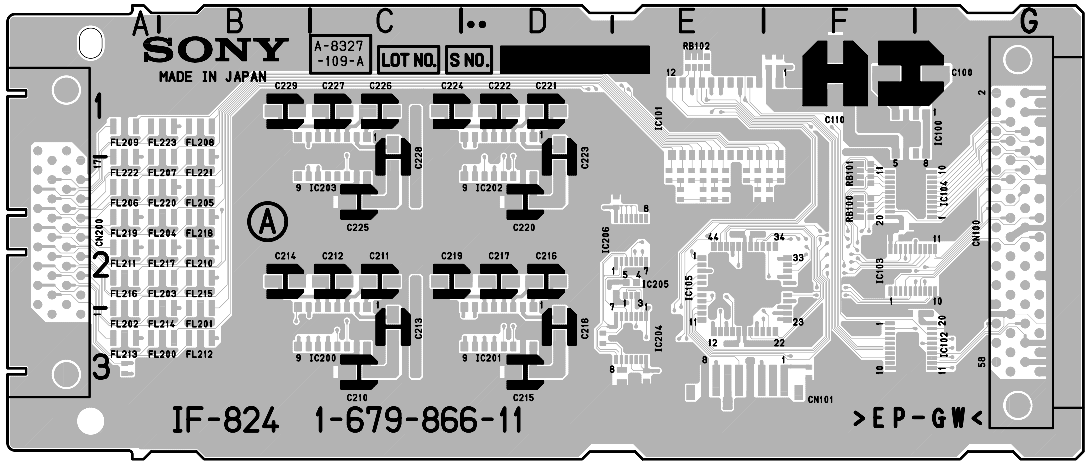
IF-823(1-679-865-11)

C100	*D1
C101	*F2
C102	F2
C103	*D1
C104	*E1
C105	*E1
C106	F1
C107	G1
C109	*F1
C112	*D1
C113	D2
C114	E1
C115	*D1
C120	C2
C121	*D2
C122	*D1
C200	*D2
C201	*F3
C202	F3
C203	*D3
C204	*E2
C205	*E3
C206	F2
C207	G2
C209	*F2
C212	*D2
C213	D3
C214	E3
C215	*D2
C220	C3
C221	*D3
C222	*D2
C300	*G3
C301	*G3
C304	*F1
C306	*G2
C311	*F2
C312	F2
C313	G2
CN100	A1
CN200	A2
CN300	G1
CN301	F3
COR100	B2
COR200	B2
D100	*D2
D101	*D2
D102	*C2
D103	*D2
D104	*D2
D105	*C2
D106	*D1
D107	*D1
D108	*C1
D109	*D1
D110	*D1
D111	*C1
D200	*D3
D201	*D3
D202	*C3
D203	*D3
D204	*D3
D205	*C3
D206	*D2
D207	*D2
D208	*C2
D209	*D3
D210	*D3
D211	*C3
E100	E1
E200	E2
FL100	B1
FL200	B2
IC100	D1
IC101	*F2
IC102	F2
IC103	*D1
IC104	*E1
IC105	*E1
IC106	F1
IC107	F1
IC109	E1
IC200	D3
IC201	*F3
IC202	F3
IC203	*D3
IC204	*E3
IC205	*E3
IC206	F2
IC207	F2
IC209	E2
IC300	*G2
IC301	*G3
IC304	*G1
IC306	*G2
IC311	*G2
IC312	F2
L100	*D1
L200	*D2
R100	*D1
R101	*D1
R102	*D1
R103	D2
R104	D2
R105	E1
R106	E1
R108	C1
R109	C1
R110	C1
R111	C1
R112	C1
R113	C2
R115	*D2
R116	*D1
R117	D2
R118	D2
R119	E2
R121	B2
R122	B2
R200	*D2
R201	*D2
R202	*D2
R203	D3
R204	D3
R205	E3
R206	E3
R208	C2
R209	C2
R210	C3
R211	C3
R212	C3
R213	C3
R215	*D3
R216	*D2
R217	D3
R218	D3
R219	E3
R221	B2
R222	B2
R300	*F2
R301	*F2
R302	*F3
RB100	E1
RB101	E1
RB102	*D1
RB103	*D2
RB104	*D2
RB105	*E2
RB106	*E2
RB107	*E2
RB108	*E2
RB109	*D2
RB110	*E2
RB200	E2
RB201	E2
RB202	*D2
RB203	*D3
RB204	*D3
RB205	*E3
RB206	*E3
RB207	*E3
RB208	*E3
RB209	*D3
RB210	*E3
RB300	G1
RB301	G1
T100	C1
T200	C3

*: B SIDE



IF-824 -B SIDE-
SUFFIX: -11



IF-824 -A SIDE-
SUFFIX: -11

IF-824(1-679-866-11)

C100	G1
C101	F1
C102	G3
C103	F2
C104	F2
C105	E3
C106	E2
C110	F1
C111	F1
C115	E2
C200	E3
C204	E3
C205	E2
C206	E2
C210	C3
C211	C2
C212	C2
C213	C3
C214	B2
C215	D3
C216	D2
C217	D2
C218	D3
C219	D2
C220	D2
C221	D1
C222	D1
C223	D2
C224	D1
C225	C2
C226	C1
C227	C1
C228	C2
C229	B1
CN100	G1
CN101	F3
CN200	A3
FL200	B3
FL201	B3
FL202	A3
FL203	B2
FL204	B2
FL205	B2
FL206	A2
FL207	B2
FL208	B1
FL209	A1
FL210	B2
FL211	A2
FL212	B3
FL213	A3
FL214	B3
FL215	B2
FL216	A2
FL217	B2
FL218	B2
FL219	A2
FL220	B2
FL221	B2
FL222	A2
FL223	B1
IC100	G1
IC101	E1
IC102	G3
IC103	G2
IC104	G2
IC105	E2
IC200	C3
IC201	D3
IC202	D2
IC203	C2
IC204	E3
IC205	E2
IC206	E2
R100	E2
R101	E2
R102	E2
R103	E2
R104	E2
R105	E2
R106	E2
R107	E2
R108	E2
R109	F2
R110	F2
R111	F2
R112	F2
R113	F2
R114	E2
R115	F3
R200	D3
R201	A3
RB100	F2
RB101	F2
RB102	E1

Section 8
Schematic Diagrams

Index

Board name	Main Function	Page
CN-2143	Connecter board	8-3
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IPM-93A	IR receiver board	8-3
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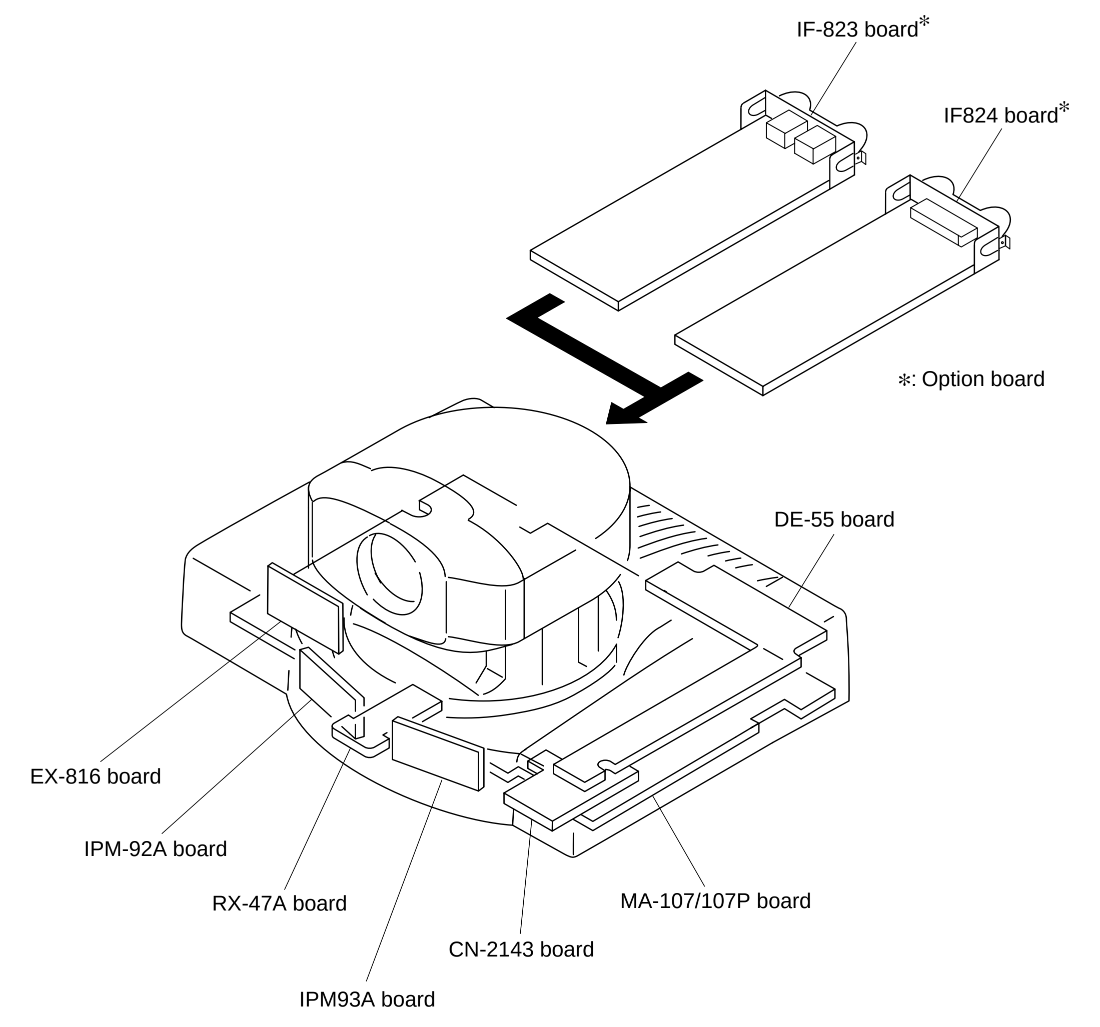
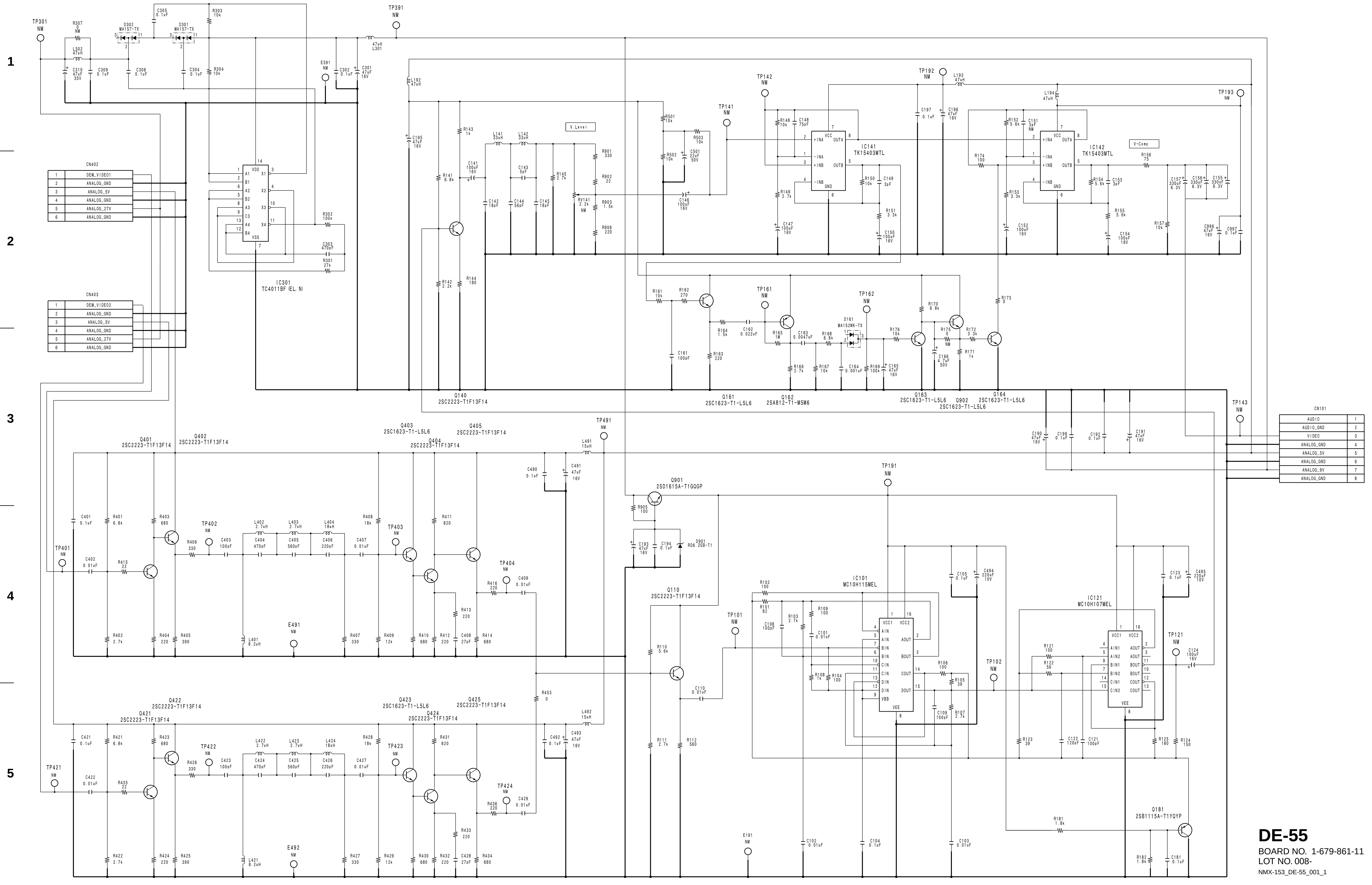
IF-824 (PCS-I161)	Interface board (V.35)	8-23

Board Layout Diagram


IF-823 board*
IF824 board*
*: Option board
DE-55 board
EX-816 board
IPM-92A board
RX-47A board
MA-107/107P board
CN-2143 board
IPM93A board

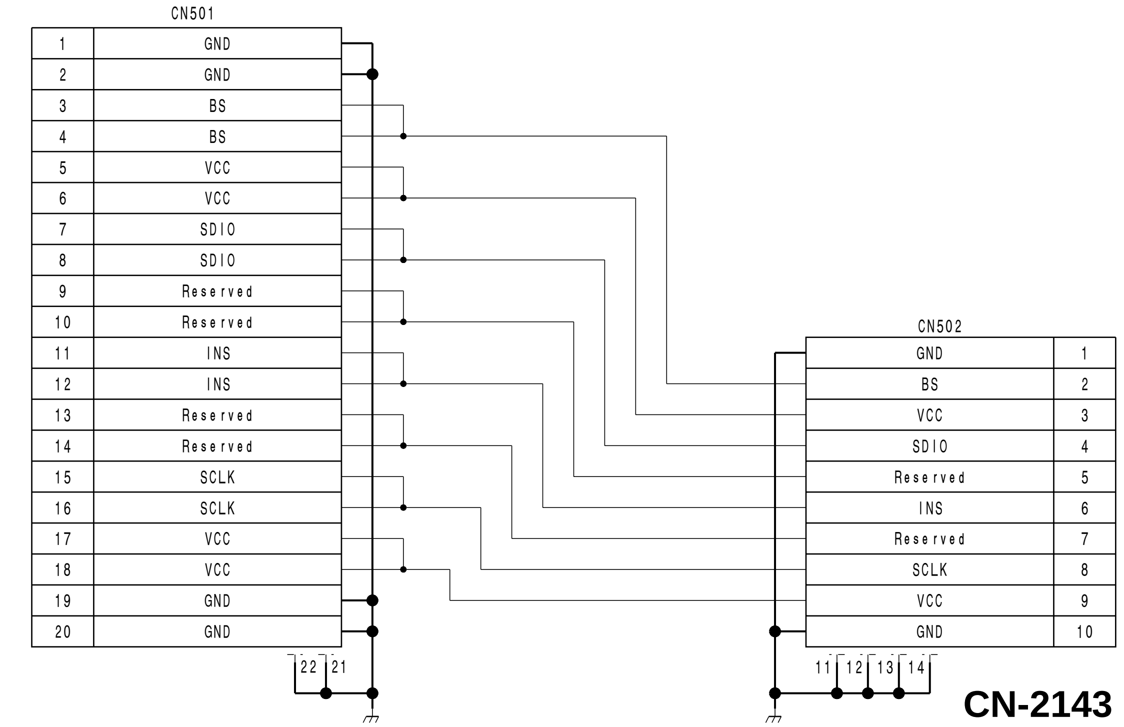
1
2
3
4
5


1
2
3
4
5
CN402
DEM_VIDEO1
ANALOG_GND
ANALOG_5V
ANALOG_GND
ANALOG_27V
ANALOG_GND
CN403
DEM_VIDEO2
ANALOG_GND
ANALOG_5V
ANALOG_GND
ANALOG_27V
ANALOG_GND
IC301
TC4011BF (EL, N)
TP301
TP391
TP142
TP141
TP192
TP193
TP161
TP162
TP143
TP191
TP101
TP102
TP121
TP401
TP402
TP403
TP404
TP421
TP422
TP423
TP424
TP491
E391
E491
E492
E191
V.Level
V-Comp
IC141
TK15403MTL
IC142
TK15403MTL
IC101
MC10H115MEL
IC121
MC10H107MEL
Q140
2SC2223-T1F13F14
Q161
2SC1623-T1-L5L6
Q162
2SA812-T1-M5M6
Q163
2SC1623-T1-L5L6
Q902
2SC1623-T1-L5L6
Q164
2SC1623-T1-L5L6
Q901
2SD1615A-T1GQGP
Q110
2SC2223-T1F13F14
Q181
2SB1115A-T1YQYP
D161
MA152WK-TX
D301
MA157-TX
D302
MA157-TX
D901
RD6.2SB-T1
Q401
2SC2223-T1F13F14
Q402
2SC2223-T1F13F14
Q403
2SC1623-T1-L5L6
Q404
2SC2223-T1F13F14
Q405
2SC2223-T1F13F14
Q421
2SC2223-T1F13F14
Q422
2SC2223-T1F13F14
Q423
2SC1623-T1-L5L6
Q424
2SC2223-T1F13F14
Q425
2SC2223-T1F13F14
CN101
AUDIO
AUDIO_GND
VIDEO
ANALOG_GND
ANALOG_5V
ANALOG_GND
ANALOG_9V
ANALOG_GND

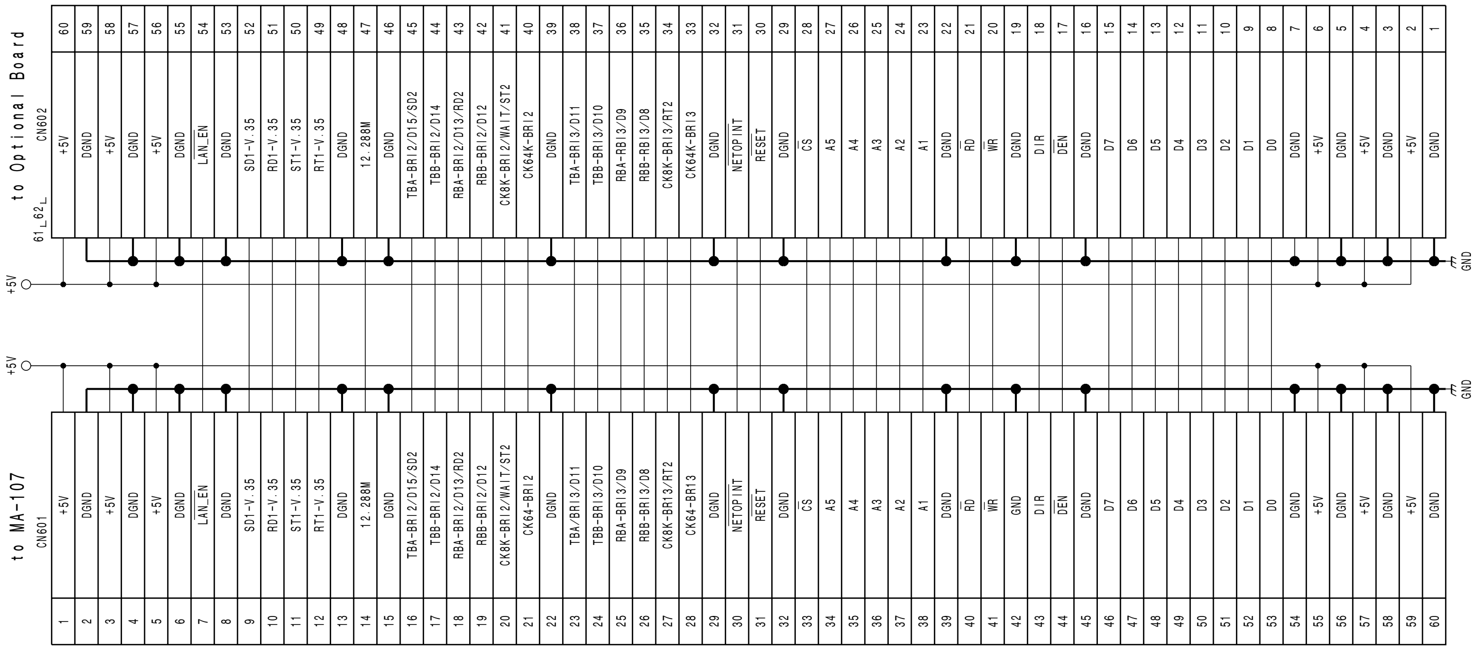
DE-55
BOARD NO. 1-679-861-11
LOT NO. 008-
NMX-153_DE-55_001_1

A B C D E F G H

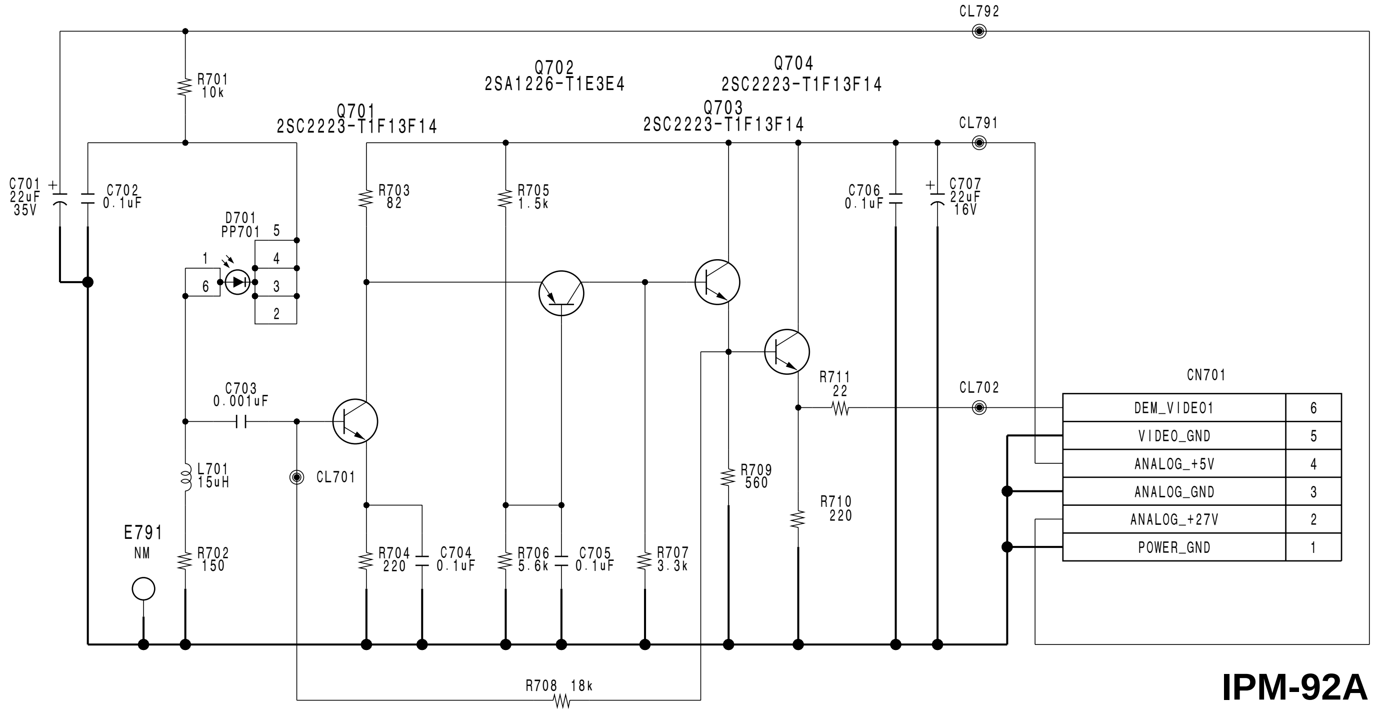
CN-2143, EX-816, IPM-92A/93A


CN501
1 GND
2 GND
3 BS
4 BS
5 VCC
6 VCC
7 SDIO
8 SDIO
9 Reserved
10 Reserved
11 INS
12 INS
13 Reserved
14 Reserved
15 SCLK
16 SCLK
17 VCC
18 VCC
19 GND
20 GND
22
21
CN502
GND 1
BS 2
VCC 3
SDIO 4
Reserved 5
INS 6
Reserved 7
SCLK 8
VCC 9
GND 10
11
12
13
14

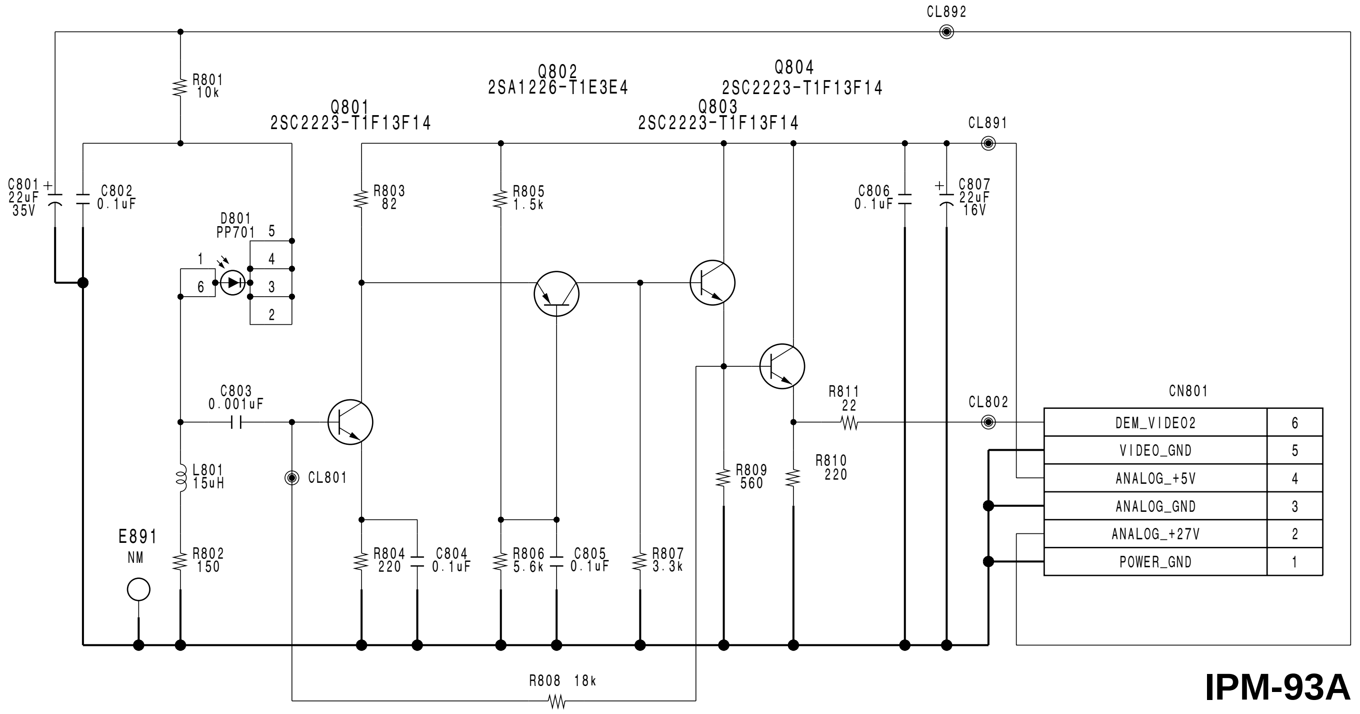
CN-2143


to Optional Board
CN602
61_62_
to MA-107
CN601
+5V
GND
1 +5V
2 DGND
3 +5V
4 DGND
5 +5V
6 DGND
7 LAN_EN
8 DGND
9 SD1-V.35
10 RD1-V.35
11 ST1-V.35
12 RT1-V.35
13 DGND
14 12.288M
15 DGND
16 TBA-BRI2/D15/SD2
17 TBB-BRI2/D14
18 RBA-BRI2/D13/RD2
19 RBB-BRI2/D12
20 CK8K-BRI2/WAIT/ST2
21 CK64K-BRI2
22 DGND
23 TBA-BRI3/D11
24 TBB-BRI3/D10
25 RBA-BRI3/D9
26 RBB-BRI3/D8
27 CK8K-BRI3/RT2
28 CK64K-BRI3
29 DGND
30 NETOPINT
31 RESET
32 DGND
33 CS
34 A5
35 A4
36 A3
37 A2
38 A1
39 DGND
40 RD
41 WR
42 DGND
43 DIR
44 DEN
45 DGND
46 D7
47 D6
48 D5
49 D4
50 D3
51 D2
52 D1
53 D0
54 DGND
55 +5V
56 DGND
57 +5V
58 DGND
59 +5V
60 DGND

EX-816


CL792
R701 10k
Q702 2SA1226-T1E3E4
Q704 2SC2223-T1F13F14
Q701 2SC2223-T1F13F14
Q703 2SC2223-T1F13F14
CL791
C701 22uF 35V
C702 0.1uF
D701 PP701
1 2 3 4 5 6
R703 82
R705 1.5k
C706 0.1uF
C707 22uF 16V
C703 0.001uF
L701 15uH
CL701
R711 22
CL702
R709 560
R710 220
E791 NM
R702 150
R704 220
C704 0.1uF
R706 5.6k
C705 0.1uF
R707 3.3k
R708 18k
CN701
DEM_VIDEO1 6
VIDEO_GND 5
ANALOG_+5V 4
ANALOG_GND 3
ANALOG_+27V 2
POWER_GND 1

IPM-92A


CL892
R801 10k
Q802 2SA1226-T1E3E4
Q804 2SC2223-T1F13F14
Q801 2SC2223-T1F13F14
Q803 2SC2223-T1F13F14
CL891
C801 22uF 35V
C802 0.1uF
D801 PP701
1 2 3 4 5 6
R803 82
R805 1.5k
C806 0.1uF
C807 22uF 16V
C803 0.001uF
L801 15uH
CL801
R811 22
CL802
R809 560
R810 220
E891 NM
R802 150
R804 220
C804 0.1uF
R806 5.6k
C805 0.1uF
R807 3.3k
R808 18k
CN801
DEM_VIDEO2 6
VIDEO_GND 5
ANALOG_+5V 4
ANALOG_GND 3
ANALOG_+27V 2
POWER_GND 1

IPM-93A

CN-2143

BOARD NO. 1-679-860-11
LOT NO. 008-
NMX-153_CN-2143_001_1

EX-816

BOARD NO. 1-679-859-11
LOT NO. 008-
NMX-153_EX-816_001_1

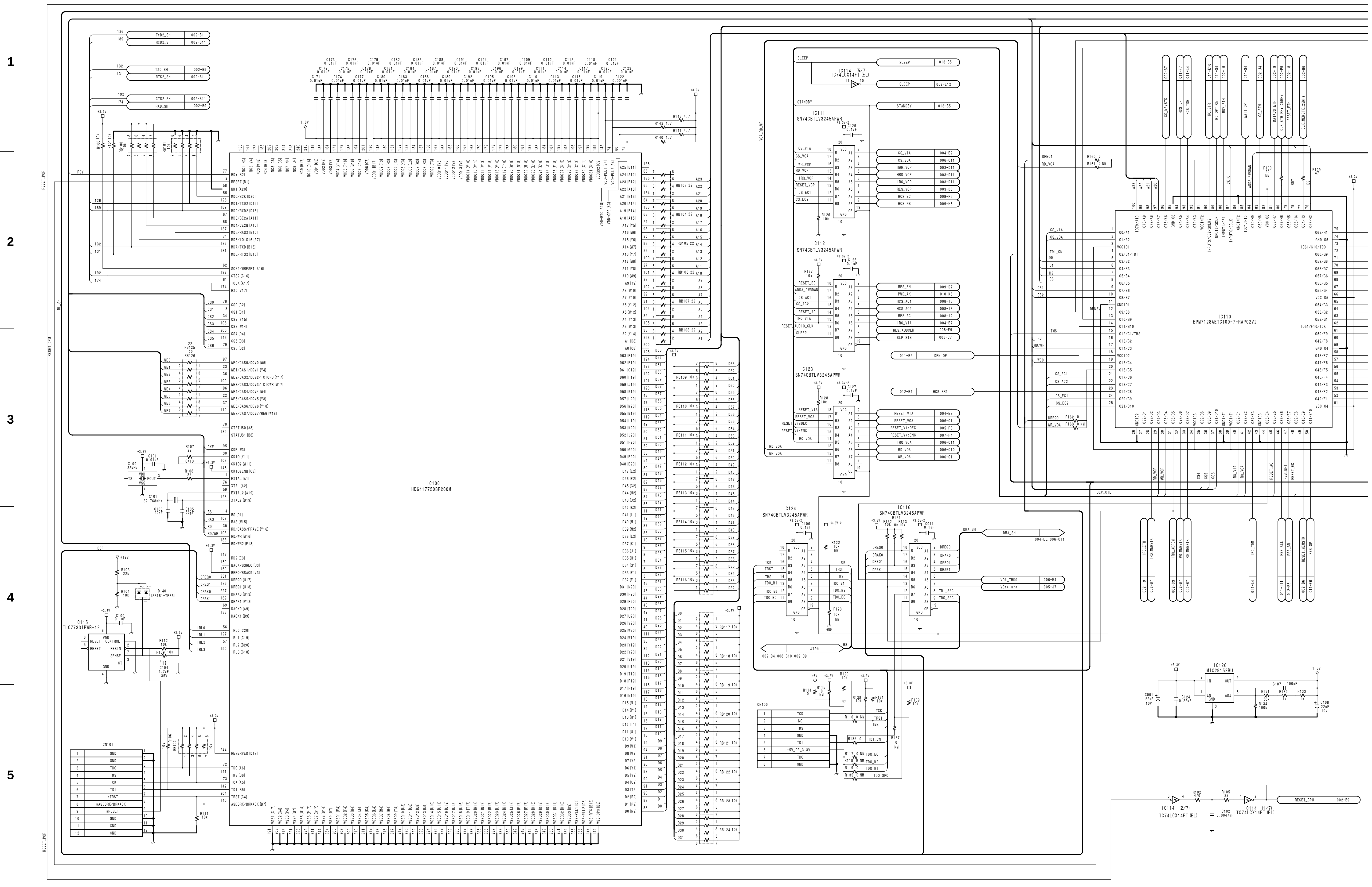
IPM-92A

BOARD NO. 1-679-862-11
LOT NO. 008-
NMX-153_IPM-92A_001_1

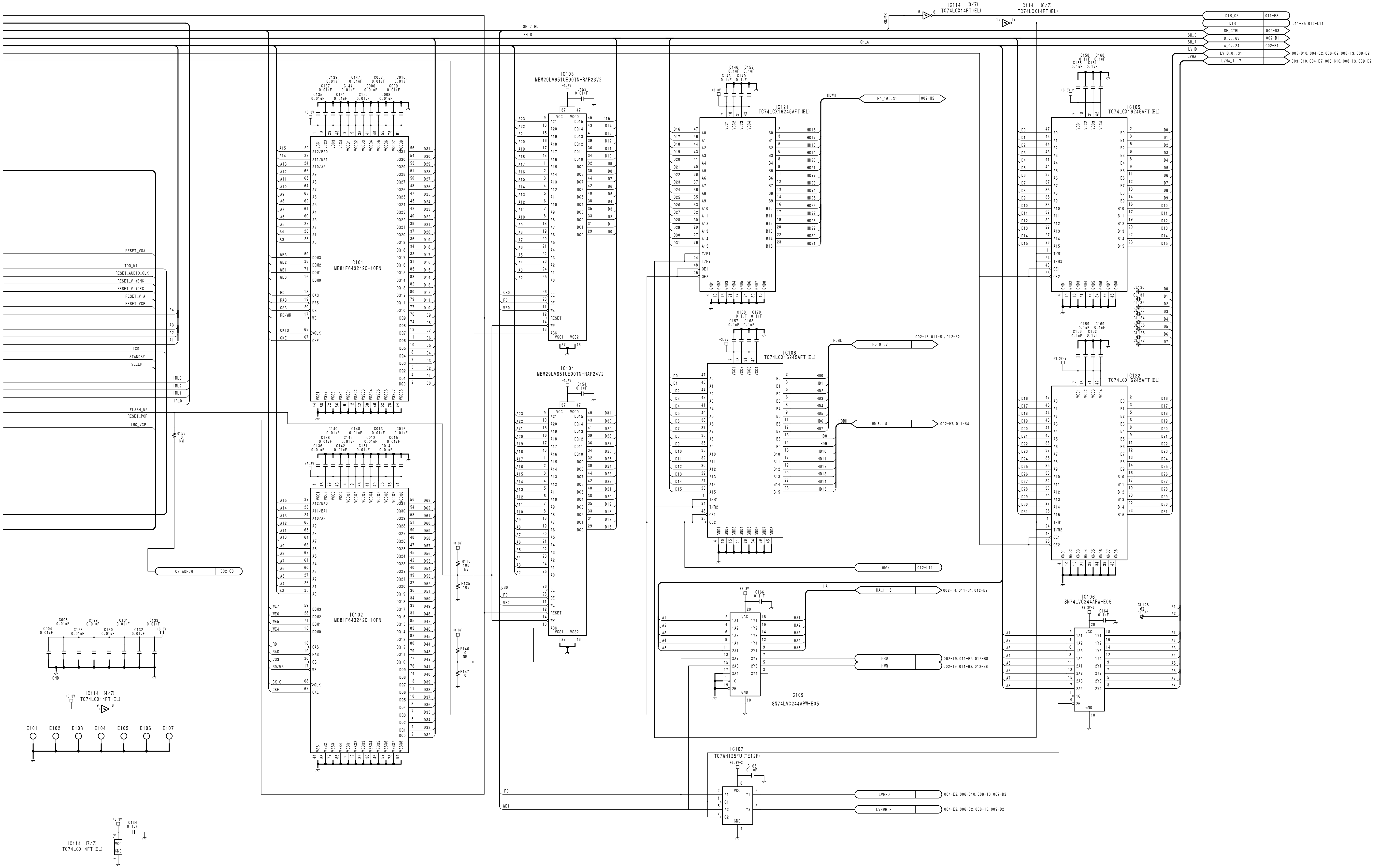
IPM-93A

BOARD NO. 1-679-863-11
LOT NO. 008-
NMX-153_IPM-93A_001_1

MA-107/107P (1/13)

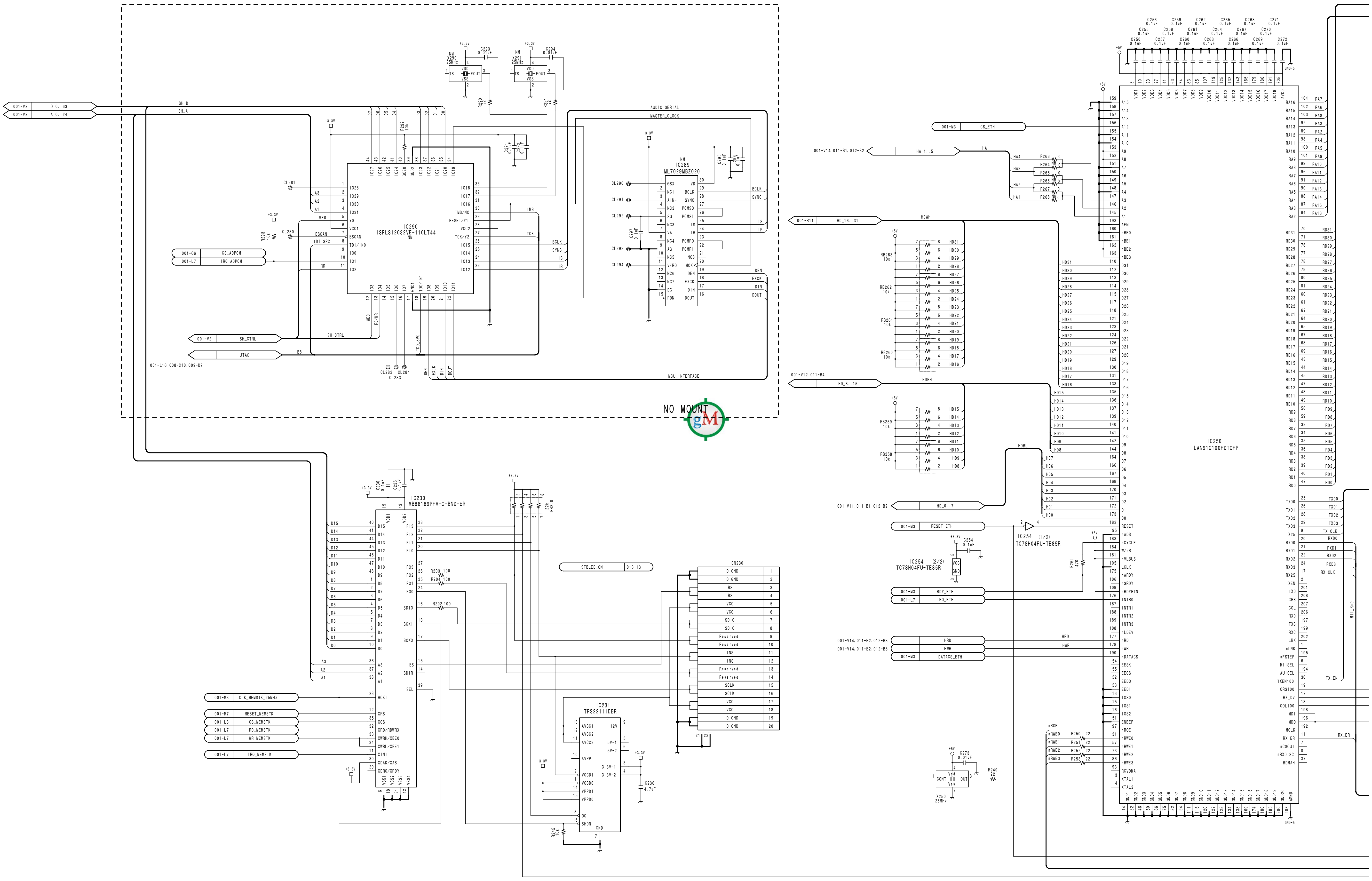

IC100
HD6417750BP200M
IC110
EPM7128AETC100-7-RAP02V2
IC111
SN74CBTLV3245APWR
IC112
SN74CBTLV3245APWR
IC123
SN74CBTLV3245APWR
IC124
SN74CBTLV3245PWR
IC116
SN74CBTLV3245APWR
IC114 (5/7)
TC74LCX14FT (EL)
IC114 (2/7)
TC74LCX14FT (EL)
IC114 (1/7)
TC74LCX14FT (EL)
IC115
TLC7733IPWR-12
IC126
MIC29152BU
D140
1SS181-TE85L
X100
33MHz
X101
32.768kHz
CN100
CN101
SLEEP
STANDBY
DMA_SH
JTAG
RESET_CPU
1
2
3
4
5
A
B
C
D
E
F
G
H

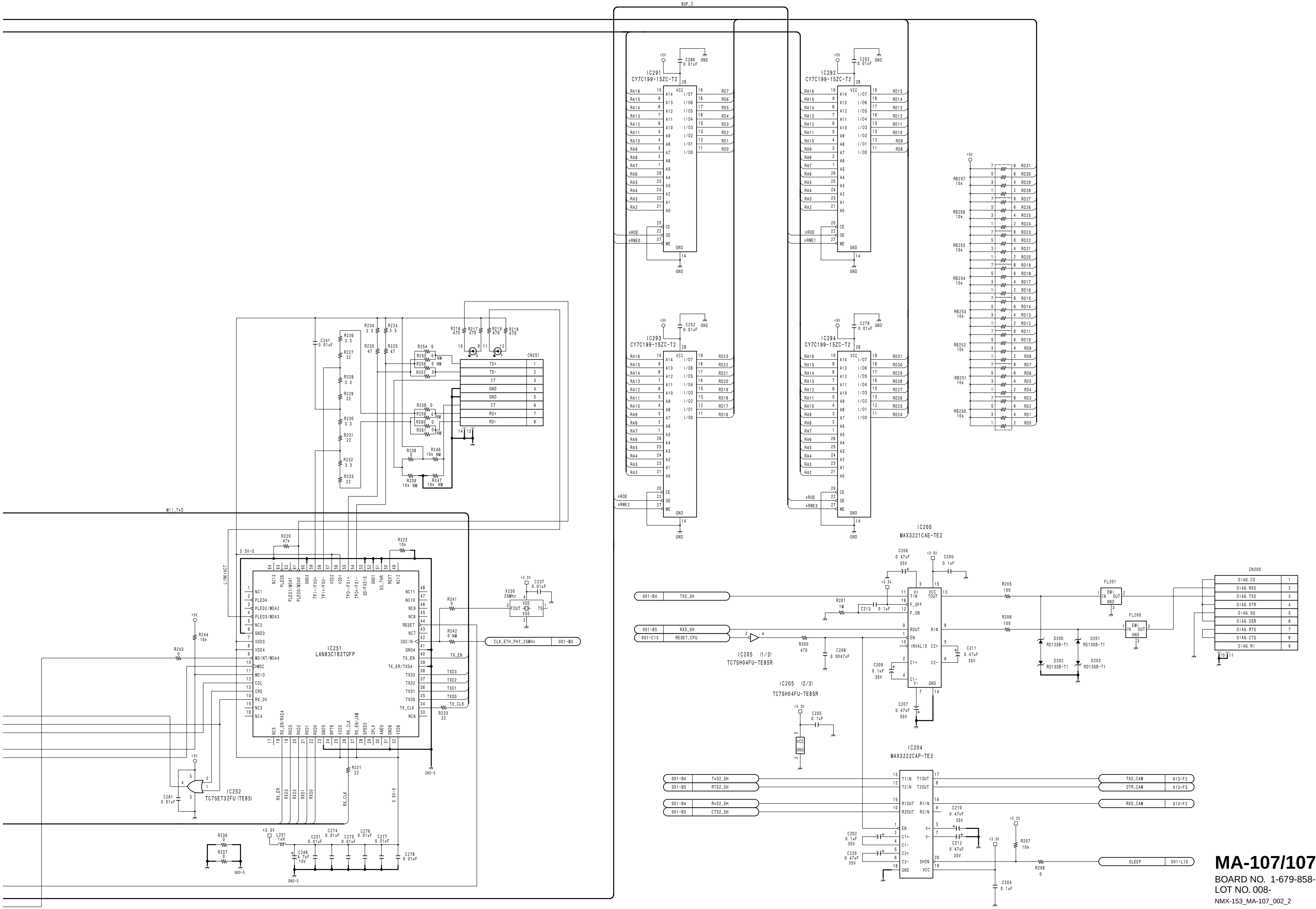
8-4


IC101
MB81F643242C-10FN
IC102
MB81F643242C-10FN
IC103
MBM29LV651UE90TN-RAP23V2
IC104
MBM29LV651UE90TN-RAP24V2
IC121
TC74LCX16245AFT (EL)
IC108
TC74LCX16245AFT (EL)
IC105
TC74LCX16245AFT (EL)
IC122
TC74LCX16245AFT (EL)
IC106
SN74LVC244APW-E05
IC109
SN74LVC244APW-E05
IC107
TC7WH125FU (TE12R)
IC114 (3/7)
TC74LCX14FT (EL)
IC114 (6/7)
TC74LCX14FT (EL)
IC114 (4/7)
TC74LCX14FT (EL)
IC114 (7/7)
TC74LCX14FT (EL)
DIR_OP
DIR
SH_CTRL
D_0..63
A_0..24
LVHD_0..31
LVHA_1..7
HD_16..31
HD_0..7
HD_8..15
HDEN
HA_1..5
HRD
HWR
LVHRD
LVHWR_P
CS_ADPCM
RESET_VDA
TDO_M1
RESET_AUDIO_CLK
RESET_VidENC
RESET_VidDEC
RESET_VIA
RESET_VCP
TCK
STANDBY
SLEEP
IRL3
IRL2
IRL1
IRL0
FLASH_WP
RESET_POR
IRQ_VCP
E101
E102
E103
E104
E105
E106
E107
1
2
3
4
5
I
J
K
L
M
N
O
P

MA-107/107P (1/13)

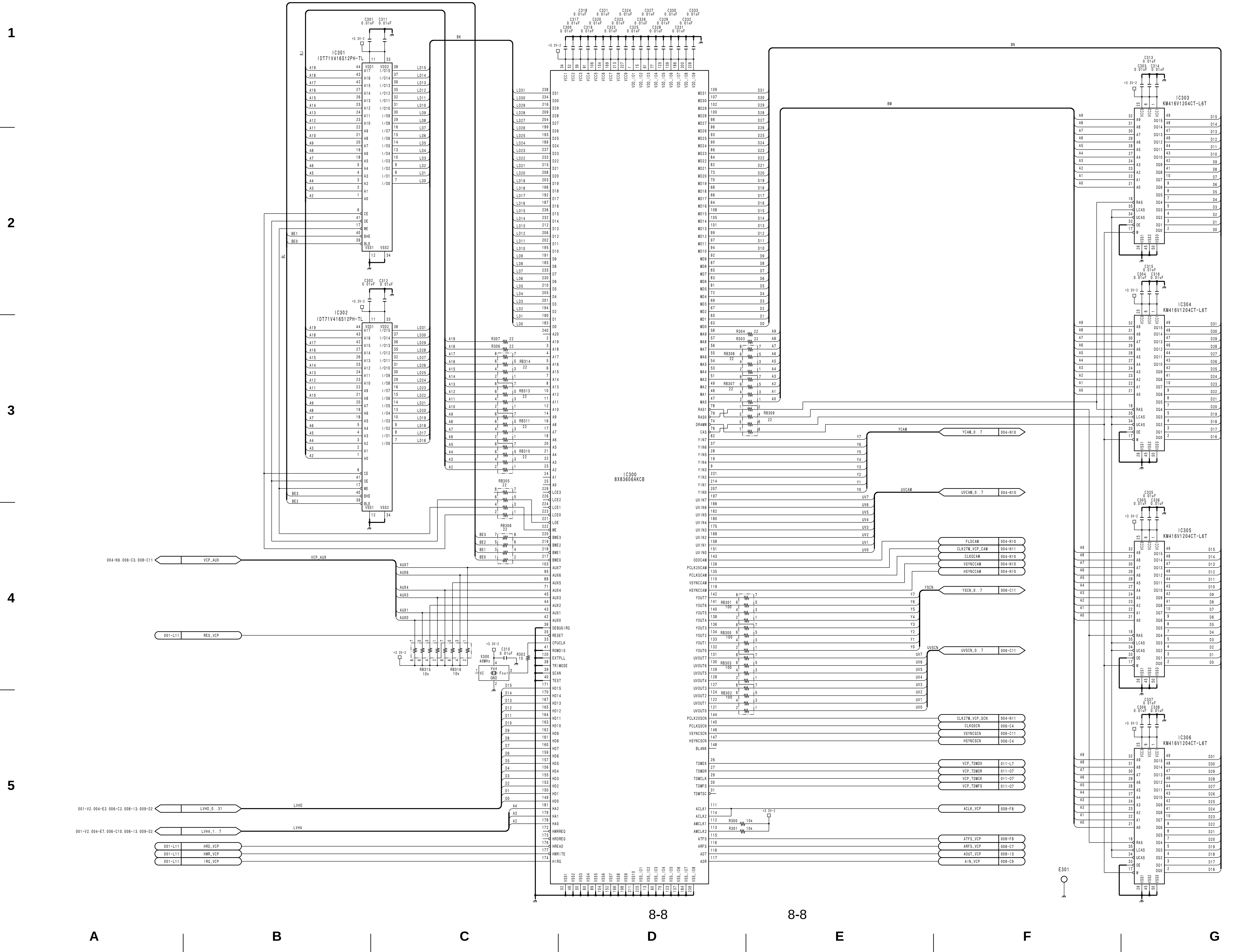
BOARD NO. 1-679-858-11
LOT NO. 008-
NMX-153_MA-107_002_1


IC290
ISPLSI2032VE-110LT44
NM
IC289
ML7029MBZ020
NM
X290 25MHz
X291 25MHz
AUDIO_SERIAL
MASTER_CLOCK
MCU_INTERFACE
SH_D
SH_A
001-V2 D_0..63
001-V2 A_0..24
001-D6 CS_ADPCM
001-L7 IRQ_ADPCM
001-V2 SH_CTRL
JTAG
001-L16, 008-C10, 009-D9
NO MOUNT
IC230
MB86189PFV-G-BND-ER
IC231
TPS2211IDBR
STBLED_ON 013-13
CN230
D GND
D GND
BS
BS
VCC
VCC
SDIO
SDIO
Reserved
Reserved
INS
INS
Reserved
Reserved
SCLK
SCLK
VCC
VCC
D GND
D GND
001-M3 CLK_MEMSTK_25MHz
001-M7 RESET_MEMSTK
001-L3 CS_MEMSTK
001-L7 RD_MEMSTK
001-L7 WR_MEMSTK
001-L7 IRQ_MEMSTK
IC250
LAN91C100FDTQFP
001-M3 CS_ETH
001-V14, 011-B1, 012-B2 HA_1..5
001-R11 HD_16..31
001-V12, 011-B4 HD_8..15
001-V11, 011-B1, 012-B2 HD_0..7
001-M3 RESET_ETH
001-M3 RDY_ETH
001-L7 IRQ_ETH
001-V14, 011-B2, 012-B8 HRD
001-V14, 011-B2, 012-B8 HWR
001-M3 DATACS_ETH
IC254 (1/2) TC7SH04FU-TE85R
IC254 (2/2) TC7SH04FU-TE85R
X250 25MHz
MII_RxD
1
2
3
4
5
A
B
C
D
E
F
G
H


1
2
3
4
5
BUF_C
IC291
CY7C199-15ZC-T2
IC292
CY7C199-15ZC-T2
IC293
CY7C199-15ZC-T2
IC294
CY7C199-15ZC-T2
RB257 10k
RB256 10k
RB255 10k
RB254 10k
RB253 10k
RB252 10k
RB251 10k
RB250 10k
CN251
TD+
TD-
CT
GND
RD+
RD-
MII_TxD
IC251
LAN83C183TQFP
X230 25MHz
CLK_ETH_PHY_25MHz
001-M3
IC252
TC7SET32FU(TE85)
IC200
MAX3221CAE-TE2
IC205 (1/2)
TC7SH04FU-TE85R
IC205 (2/2)
TC7SH04FU-TE85R
IC204
MAX3222CAP-TE2
001-B4 TXD_SH
001-B5 RXD_SH
001-C13 RESET_CPU
001-B4 TxD2_SH
001-B5 RTS2_SH
001-B4 RxD2_SH
001-B5 CTS2_SH
TXD_CAM 013-F2
DTR_CAM 013-F3
RXD_CAM 013-F2
SLEEP 001-L10
FL201
FL200
D200 RD13SB-T1
D201 RD13SB-T1
D202 RD13SB-T1
D203 RD13SB-T1
CN200
DIAG.CD
DIAG.RXD
DIAG.TXD
DIAG.DTR
DIAG.SG
DIAG.DSR
DIAG.RTS
DIAG.CTS
DIAG.RI
I
J
K
L
M
N
O
P

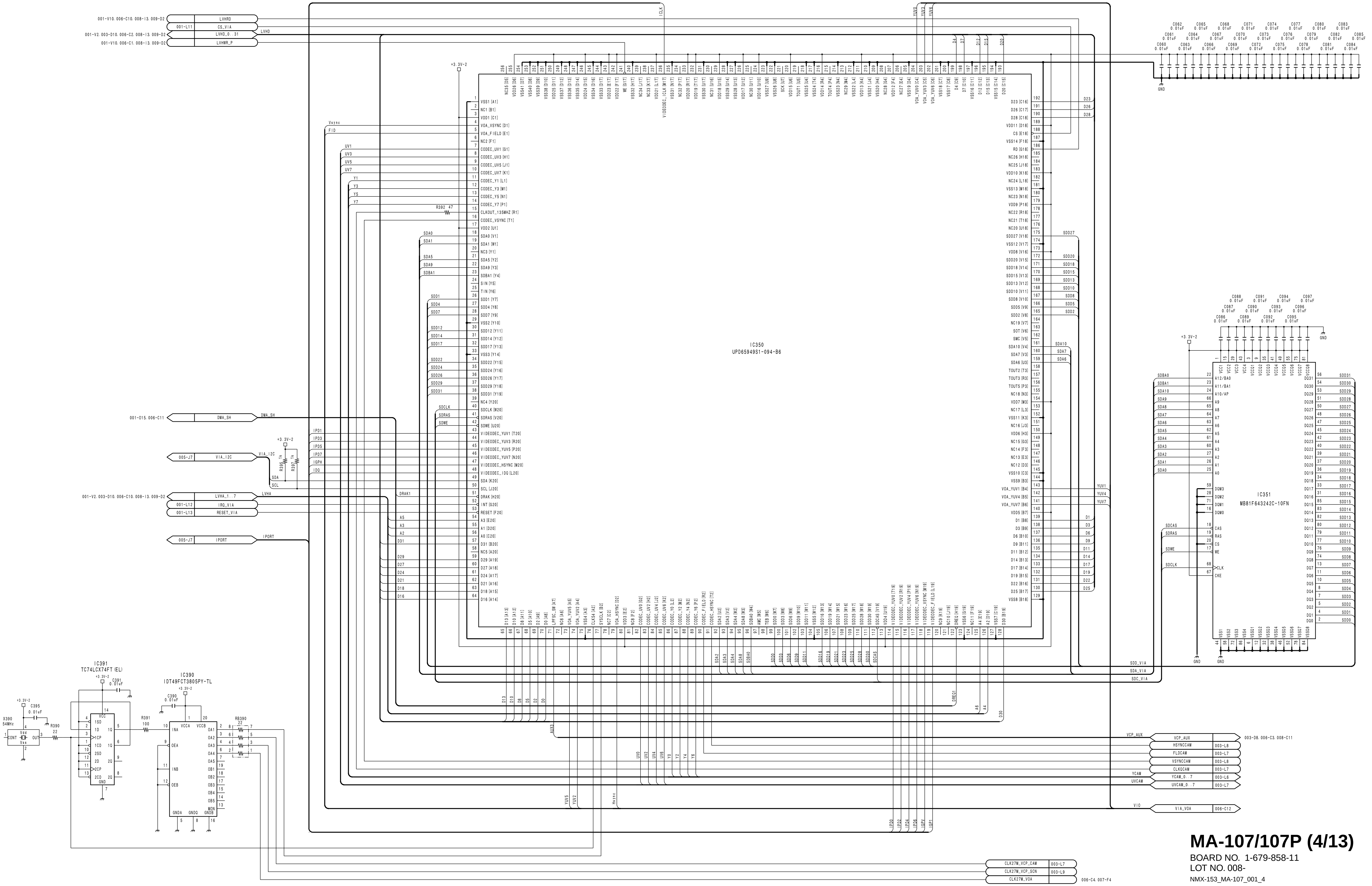
MA-107/107P (2/13)

BOARD NO. 1-679-858-11
LOT NO. 008-
NMX-153_MA-107_002_2


IC301
IDT71V416S12PH-TL
IC302
IDT71V416S12PH-TL
IC300
8X83606AKCB
IC303
KM416V1204CT-L6T
IC304
KM416V1204CT-L6T
IC305
KM416V1204CT-L6T
IC306
KM416V1204CT-L6T
X300
40MHz
E301
VCP_AUX
RES_VCP
LVHD_0..31
LVHA_1..7
HRD_VCP
HWR_VCP
IRQ_VCP
YCAM_0..7
UVCAM_0..7
FLDCAM
CLK27M_VCP_CAM
CLKQCAM
VSYNCCAM
HSYNCCAM
YSCN_0..7
UVSCN_0..7
CLK27M_VCP_SCN
CLKQSCN
VSYNCSCN
HSYNCSCN
VCP_TDMDX
VCP_TDMDR
VCP_TDMCLK
VCP_TDMFS
ACLK_VCP
ATFS_VCP
ARFS_VCP
AOUT_VCP
AIN_VCP
1
2
3
4
5
A
B
C
D
E
F
G

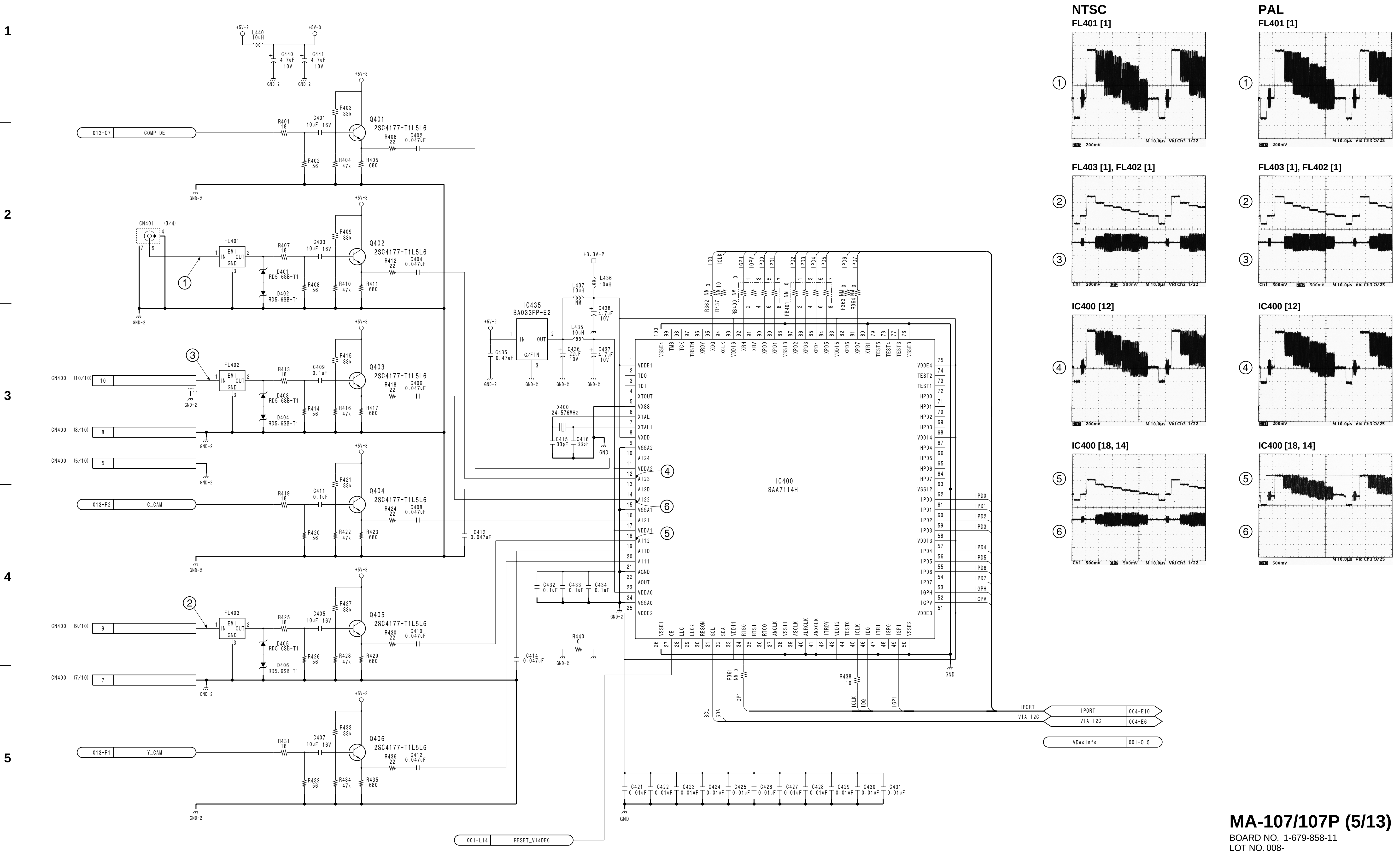
MA-107/107P (3/13)

BOARD NO. 1-679-858-11
LOT NO. 008-
NMX-153_MA-107_001_3


IC350
UPD65949S1-094-B6
IC351
MB81F643242C-10FN
IC390
IDT49FCT3805PY-TL
IC391
TC74LCX74FT (EL)
X390
54MHz
R390
22
R391
100
R392 47
RB390
22
+3.3V-2
GND
LVHRD
CS_VIA
LVHD_0...31
LVHWR_P
DMA_SH
VIA_I2C
LVHA_1...7
IRQ_VIA
RESET_VIA
IPORT
VCP_AUX
HSYNCCAM
FLDCAM
VSYNCCAM
CLKOCAM
YCAM_0...7
UVCAM_0...7
VIA_VDA
CLK27M_VCP_CAM
CLK27M_VCP_SCN
CLK27M_VDA
SDD_VIA
SDA_VIA
SDC_VIA
1
2
3
4
5
A
B
C
D
E
F
G
H

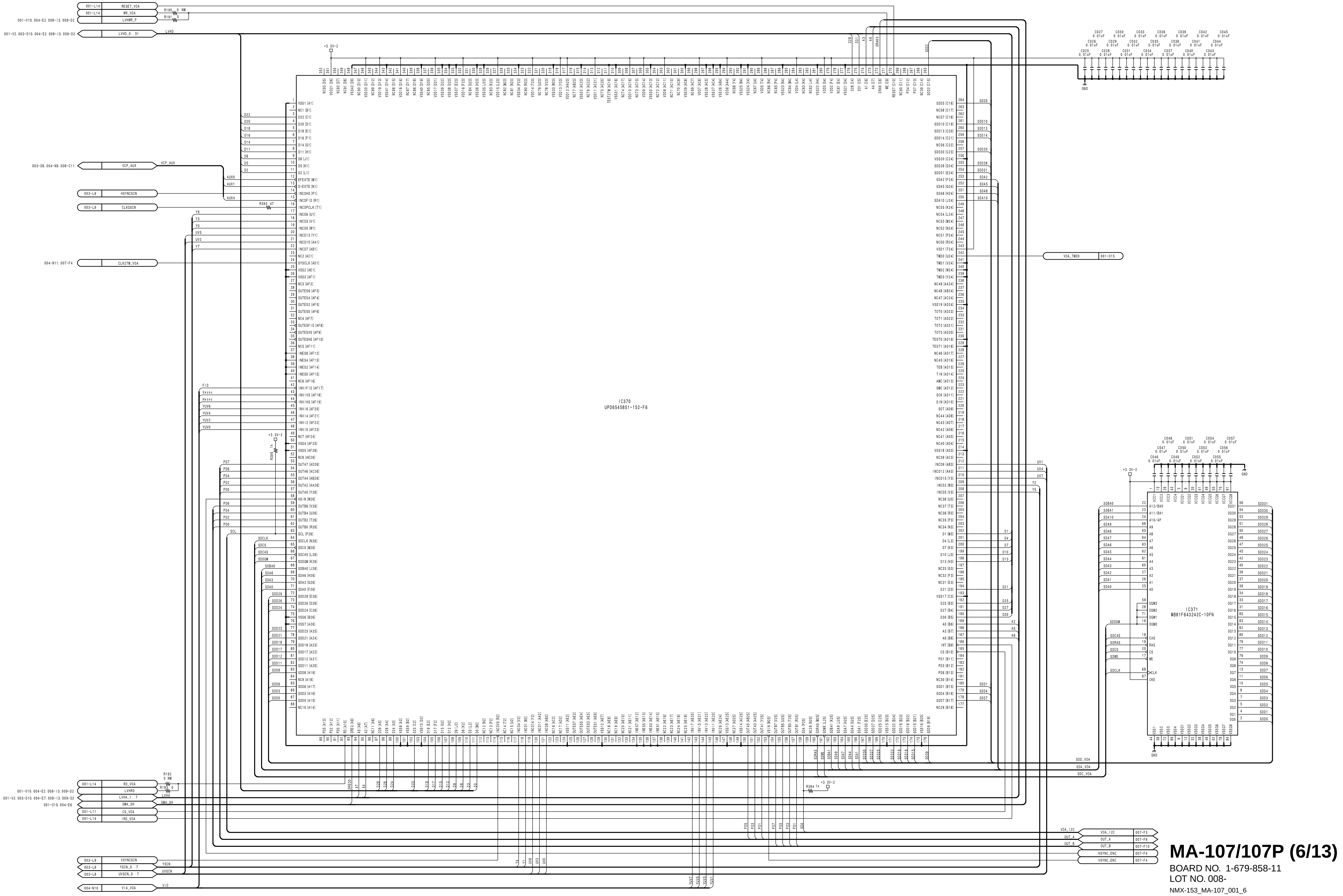
MA-107/107P (4/13)

BOARD NO. 1-679-858-11
LOT NO. 008-
NMX-153_MA-107_001_4


1
2
3
4
5
NTSC
PAL
FL401 [1]
FL403 [1], FL402 [1]
IC400 [12]
IC400 [18, 14]
①
②
③
④
⑤
⑥
+5V-2
+5V-3
L440 10uH
C440 4.7uF 10V
C441 4.7uF 10V
GND-2
013-C7
COMP_DE
R401 18
C401 10uF 16V
R403 33k
Q401 2SC4177-T1L5L6
R406 22
C402 0.047uF
R402 56
R404 47k
R405 680
CN401 (3/4)
FL401
EMI
IN OUT
GND
R407 18
C403 10uF 16V
R409 33k
Q402 2SC4177-T1L5L6
R412 22
C404 0.047uF
D401 RD5.6SB-T1
D402 RD5.6SB-T1
R408 56
R410 47k
R411 680
CN400 (10/10)
CN400 (8/10)
CN400 (5/10)
CN400 (9/10)
CN400 (7/10)
FL402
R413 18
C409 0.1uF
R415 33k
Q403 2SC4177-T1L5L6
R418 22
C406 0.047uF
D403 RD5.6SB-T1
D404 RD5.6SB-T1
R414 56
R416 47k
R417 680
013-F2
C_CAM
R419 18
C411 0.1uF
R421 33k
Q404 2SC4177-T1L5L6
R424 22
C408 0.047uF
R420 56
R422 47k
R423 680
C413 0.047uF
FL403
R425 18
C405 10uF 16V
R427 33k
Q405 2SC4177-T1L5L6
R430 22
C410 0.047uF
D405 RD5.6SB-T1
D406 RD5.6SB-T1
R426 56
R428 47k
R429 680
C414 0.047uF
013-F1
Y_CAM
R431 18
C407 10uF 16V
R433 33k
Q406 2SC4177-T1L5L6
R436 22
C412 0.047uF
R432 56
R434 47k
R435 680
001-L14
RESET_VidDEC
IC435 BA033FP-E2
IN OUT
G/FIN
C435 0.47uF
+3.3V-2
L437 10uH NM
L436 10uH
C438 4.7uF 10V
L435 10uH
C436 22uF 10V
C437 4.7uF 10V
X400 24.576MHz
C415 33pF
C416 33pF
GND
C432 0.1uF
C433 0.1uF
C434 0.1uF
R440 0
IC400 SAA7114H
VDDE1 TDO TDI XTOUT VXSS XTAL XTALI VXDD VSSA2 AI24 VDDA2 AI23 AI2D AI22 VSSA1 AI21 VDDA1 AI12 AI1D AI11 AGND AOUT VDDA0 VSSA0 VDDE2
VSSE1 CE LLC LLC2 RESON SCL SDA VDDI1 RTS0 RTS1 RTCO AMCLK VSSI1 ASCLK ALRCLK AMXCLK ITRDY VDDI2 TEST0 ICLK IDQ ITRI IGP0 IGP1 VSSE2
VDDE4 TEST2 TEST1 HPD0 HPD1 HPD2 HPD3 VDDI4 HPD4 HPD5 HPD6 HPD7 VSSI2 IPD0 IPD1 IPD2 IPD3 VDDI3 IPD4 IPD5 IPD6 IPD7 IGPH IGPV VDDE3
VSSE4 TMS TCK TRST XRDY XDQ XCLK VDDI6 XRH XRV XPD0 XPD1 VSSI3 XPD2 XPD3 XPD4 XPD5 VDDI5 XPD6 XPD7 XTRI TEST5 TEST4 TEST3 VSSE3
R362 NM 0
R437 10
RB400 NM 0
RB401 NM 0
R363 NM 0
R364 NM 0
IDQ ICLK IGPH IGPV IPD0 IPD1 IPD2 IPD3 IPD4 IPD5 IPD6 IPD7
R361 NM 0
R438 10
SCL SDA IGP1 ICLK IDQ IGP1
IPORT
VIA_I2C
004-E10
004-E6
VDecInfo
001-O15
C421 0.01uF
C422 0.01uF
C423 0.01uF
C424 0.01uF
C425 0.01uF
C426 0.01uF
C427 0.01uF
C428 0.01uF
C429 0.01uF
C430 0.01uF
C431 0.01uF
Ch1 200mV
M 10.0µs Vid Ch3 1/22
M 10.0µs Vid Ch3 O/25
Ch1 500mV
Ch2 500mV
A
B
C
D
E
F
G
H

MA-107/107P (5/13)

BOARD NO. 1-679-858-11
LOT NO. 008-
NMX-153_MA-107_001_5

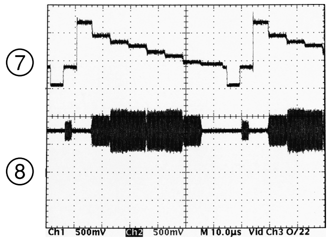

IC370
UPD65458S1-152-F6
IC371
MB81F643242C-10FN
RESET_VOA
MR_VOA
LVHMR_P
LVHD_0...31
VCP_AUX
HSYNCSCN
CLKDSCN
CLK27M_VOA
VOA_TMDO
RD_VOA
LVHRD
LVHA_1...7
DMA_SH
CS_VOA
IRQ_VOA
VSYNCSCN
YSCN_0...7
UVSCN_0...7
VIA_VOA
VOA_I2C
OUT_A
OUT_B
HSYNC_ENC
VSYNC_ENC
+3.3V-2
GND
1
2
3
4
5
A
B
C
D
E
F
G
H

MA-107/107P (6/13)

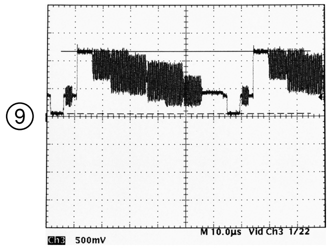
BOARD NO. 1-679-858-11
LOT NO. 008-
NMX-153_MA-107_001_6

NTSC

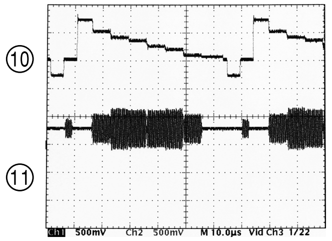
IC450 [51, 48]



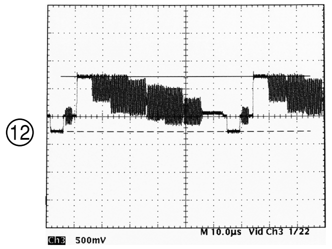
IC450 [45]



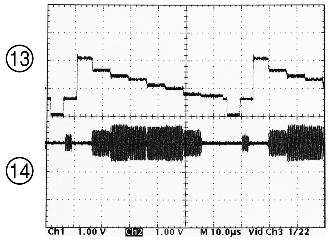
Q45 [E], Q453 [E]



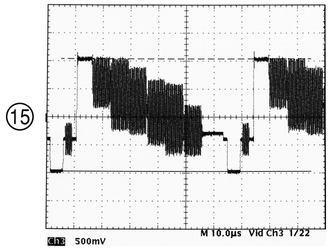
Q455 [E]



FL461 [2], FL462 [2]

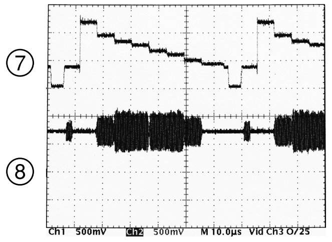


FL463 [2]

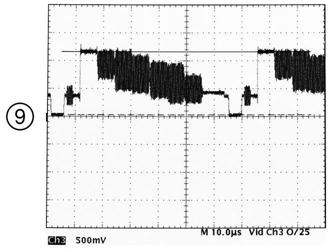


PAL

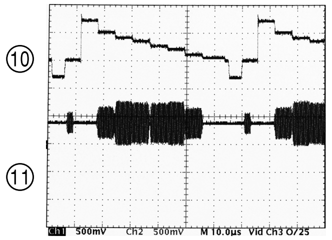
IC450 [51, 48]



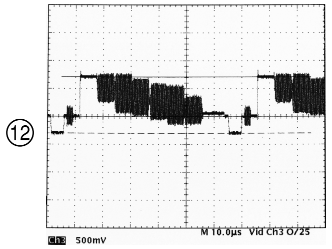
IC450 [45]



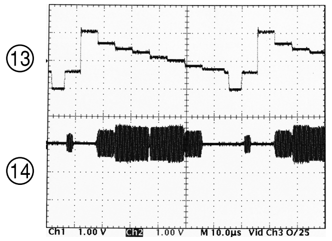
Q45 [E], Q453 [E]



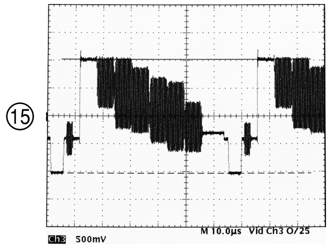
Q455 [E]

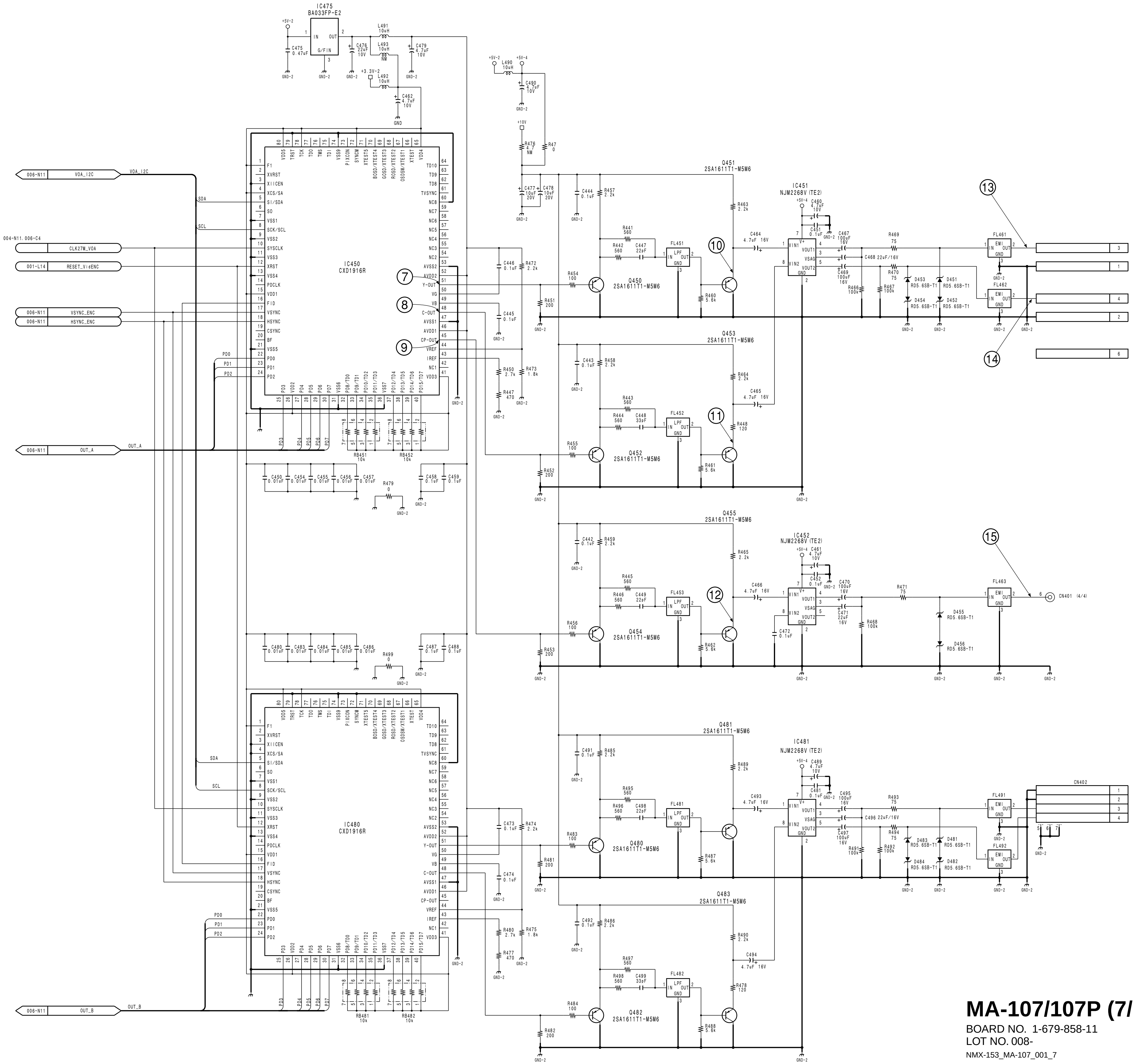


FL461 [2], FL462 [2]



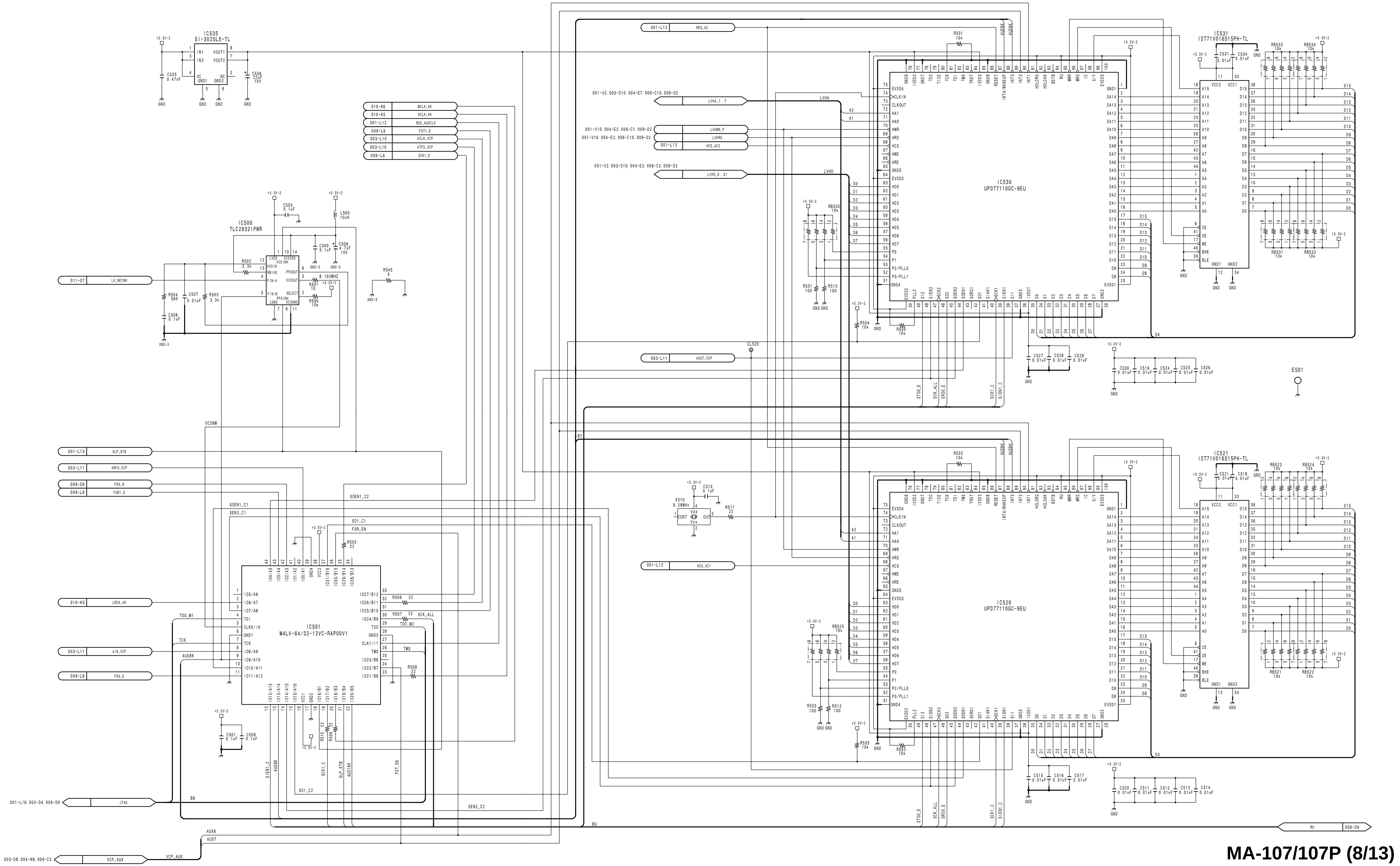
FL463 [2]




IC475
BA033FP-E2
IC450
CXD1916R
IC480
CXD1916R
IC451
NJM2268V (TE2)
IC452
NJM2268V (TE2)
IC481
NJM2268V (TE2)
Q450
2SA1611T1-M5M6
Q451
2SA1611T1-M5M6
Q452
2SA1611T1-M5M6
Q453
2SA1611T1-M5M6
Q454
2SA1611T1-M5M6
Q455
2SA1611T1-M5M6
Q480
2SA1611T1-M5M6
Q481
2SA1611T1-M5M6
Q482
2SA1611T1-M5M6
Q483
2SA1611T1-M5M6
FL451
FL452
FL453
FL461
FL462
FL463
FL481
FL482
FL491
FL492
RB451
RB452
RB481
RB482
006-N11 VOA_I2C
004-N11, 006-C4 CLK27M_VOA
001-L14 RESET_VidENC
006-N11 VSYNC_ENC
006-N11 HSYNC_ENC
006-N11 OUT_A
006-N11 OUT_B
SDA
SCL
CN400
CN401
CN402
⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑭
⑮

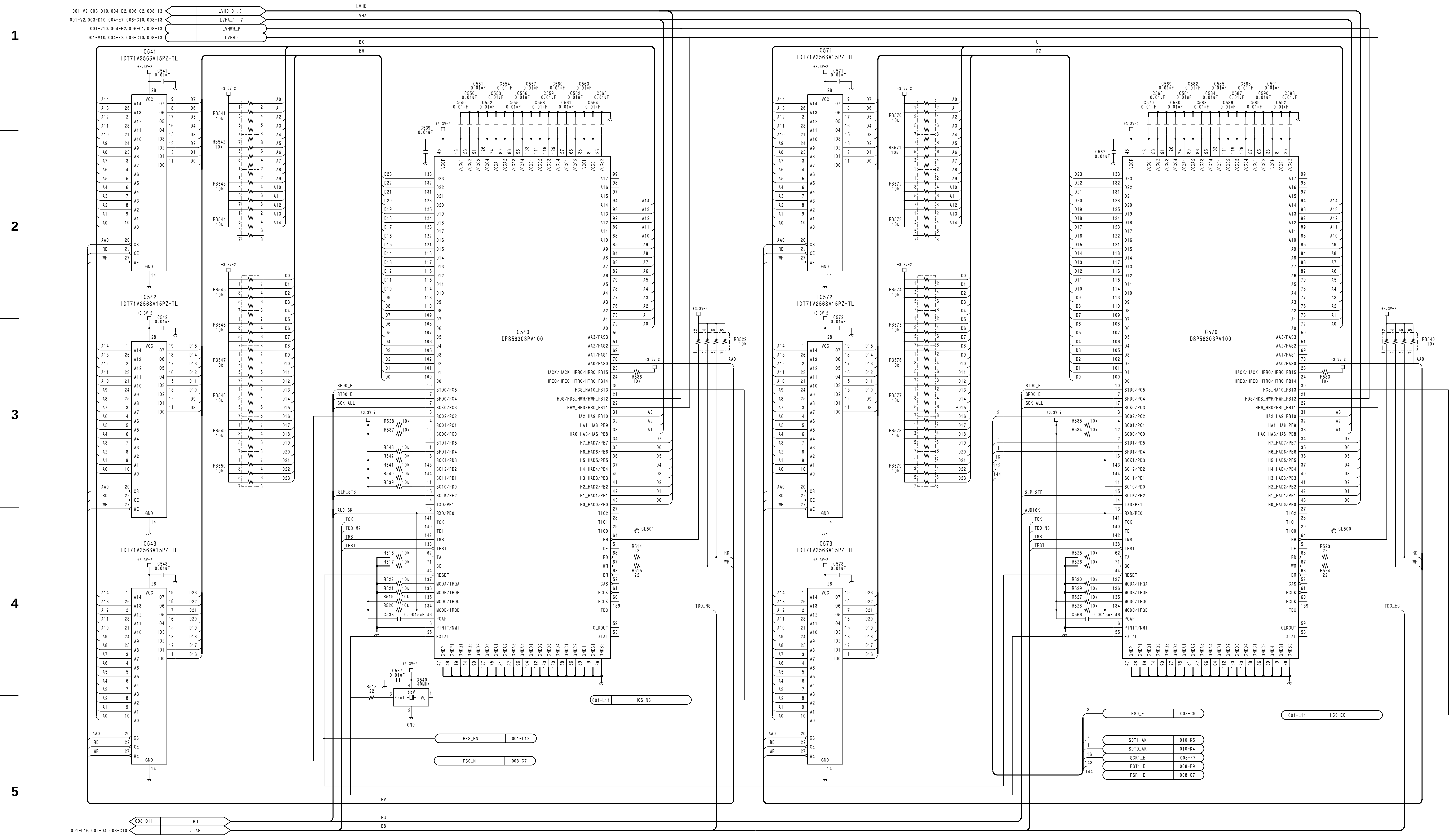
MA-107/107P (7/13)

BOARD NO. 1-679-858-11
LOT NO. 008-
NMX-153_MA-107_001_7


IC535
SI-3025LS-TL
C535 0.47uF
C536 22uF 10V
IC500
TLC2932IPWR
C505 0.1uF
L500 10uH
C500 0.1uF
C506 4.7uF 10V
R502 3.3k
R504 560
C507 0.01uF
R503 3.3k
C508 0.1uF
R501 10
R500 10k
8.192MHZ
R545 0
011-D7 LV_NET8K
010-K6 MCLK_AK
010-K5 SCLK_AK
001-L12 RES_AUDCLK
009-L6 FST1_E
003-L10 ACLK_VCP
003-L10 ATFS_VCP
009-L6 SCK1_E
001-L12 RES_AC
LVHA_1...7
LVHWR_P
LVHRD
001-L12 HCS_AC2
LVHD_0...31
003-L11 AOUT_VCP
CL520
IC530
UPD77110GC-9EU
R531 10k
RB535 10k
R551 100
R513 100
R554 10k
R530 10k
C527 0.01uF
C528 0.01uF
C529 0.01uF
C530 0.01uF
C519 0.01uF
C524 0.01uF
C525 0.01uF
C526 0.01uF
E501
IC531
IDT71V016S15PH-TL
C531 0.01uF
C534 0.01uF
RB533 10k
RB534 10k
RB531 10k
RB532 10k
VCC08M
001-L13 SLP_STB
003-L11 ARFS_VCP
009-D6 FS0_N
009-L6 FSR1_E
SOEN1_C1
SEN2_C1
SOEN1_C2
SO1_C1
FSR_EN
R505 22
IC501
M4LV-64/32-12VC-RAP00V1
R506 22
R507 22
SCK_ALL
TDO_M1
TDO_M2
TMS
R508 22
TCK
AUD8K
010-K5 LRCK_AK
003-L11 AIN_VCP
009-L6 FS0_E
C501 0.1uF
C509 0.1uF
R510 22
R509 22
SIEN1_C
AUD8K
SCK1_C
SLP_STB
AUD16K
FST_EN
SO1_C2
SEN2_C2
001-L16. 002-D4. 009-D9 JTAG
B8
AUX6
AUX7
003-D8. 004-N9. 006-C3 VCP_AUX
VCP_AUX
X510 9.28MHz
C510 0.1uF
R511 22
001-L12 HCS_AC1
IC520
UPD77110GC-9EU
R532 10k
RB525 10k
R553 100
R512 100
R555 10k
R533 10k
C515 0.01uF
C516 0.01uF
C517 0.01uF
C520 0.01uF
C511 0.01uF
C512 0.01uF
C513 0.01uF
C514 0.01uF
IC521
IDT71V016S15PH-TL
C521 0.01uF
C518 0.01uF
RB523 10k
RB524 10k
RB521 10k
RB522 10k
STDO_E
SCK_ALL
SRDO_E
SCK1_C
SIEN1_C
BU
009-D9
1
2
3
4
5

MA-107/107P (8/13)

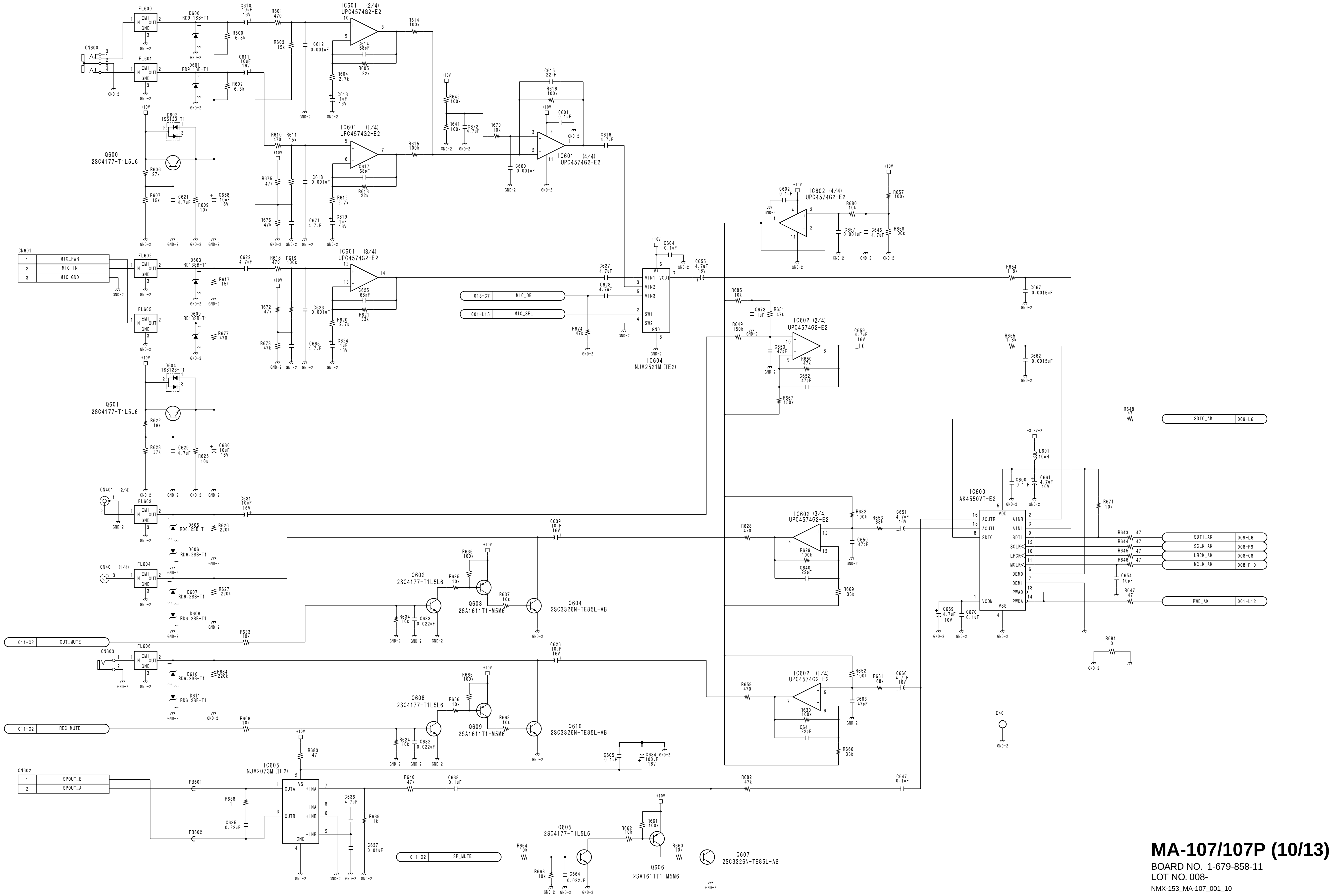
BOARD NO. 1-679-858-11
LOT NO. 008-
NMX-153_MA-107_001_8


1
2
3
4
5
LVHD_0..31
LVHA_1..7
LVHWR_P
LVHRD
IC541
IDT71V256SA15PZ-TL
IC542
IDT71V256SA15PZ-TL
IC543
IDT71V256SA15PZ-TL
IC540
DSP56303PV100
IC571
IDT71V256SA15PZ-TL
IC572
IDT71V256SA15PZ-TL
IC573
IDT71V256SA15PZ-TL
IC570
DSP56303PV100
X540
40MHz
CL501
CL500
RES_EN
FS0_N
HCS_NS
HCS_EC
FS0_E
SDTI_AK
SDTO_AK
SCK1_E
FST1_E
FSR1_E
BU
JTAG
TDO_NS
TDO_EC

MA-107/107P (9/13)

BOARD NO. 1-679-858-11
LOT NO. 008-
NMX-153_MA-107_001_9

A
B
C
D
E
F
G
H

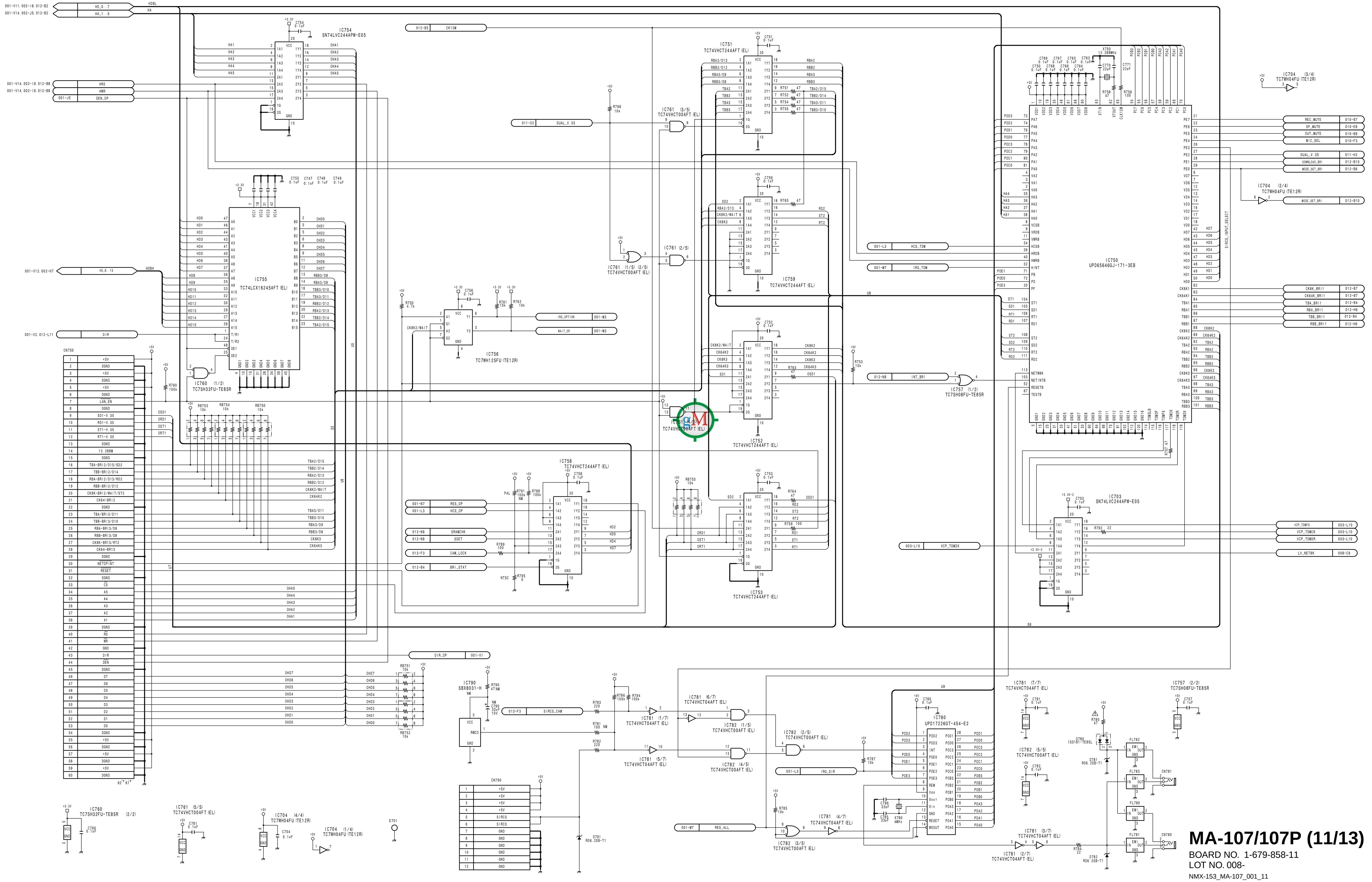

FL600
EMI
IN OUT
GND
D600
RD9.1SB-T1
C610
10uF
16V
R601
470
IC601 (2/4)
UPC4574G2-E2
R614
100k
R600
6.8k
R603
15k
C612
0.001uF
C614
68pF
R605
22k
R604
2.7k
C613
1uF
16V
CN600
FL601
D601
RD9.1SB-T1
C611
10uF
16V
R602
6.8k
D602
1SS123-T1
Q600
2SC4177-T1L5L6
R606
27k
R607
15k
C621
4.7uF
R609
10k
C668
10uF
16V
R610
470
R611
15k
IC601 (1/4)
UPC4574G2-E2
R615
100k
C617
68pF
R613
22k
R675
47k
C618
0.001uF
R612
2.7k
R676
47k
C671
4.7uF
C619
1uF
16V
R642
100k
R641
100k
C672
4.7uF
R670
10k
C615
22pF
R616
100k
C601
0.1uF
IC601 (4/4)
UPC4574G2-E2
C660
0.001uF
C616
4.7uF
CN601
MIC_PWR
MIC_IN
MIC_GND
FL602
D603
RD13SB-T1
C622
4.7uF
R618
470
R619
100k
IC601 (3/4)
UPC4574G2-E2
R617
15k
C625
68pF
R621
33k
R672
47k
C623
0.001uF
R620
2.7k
R673
47k
C665
4.7uF
C624
1uF
16V
FL605
D609
RD13SB-T1
R677
470
D604
1SS123-T1
Q601
2SC4177-T1L5L6
R622
18k
R623
27k
C629
4.7uF
R625
10k
C630
10uF
16V
013-C7
MIC_DE
001-L15
MIC_SEL
R674
47k
C627
4.7uF
C628
4.7uF
C604
0.1uF
IC604
NJM2521M (TE2)
VIN1 VOUT
VIN2
VIN3
SW1
SW2
GND
C655
4.7uF
16V
C602
0.1uF
IC602 (4/4)
UPC4574G2-E2
R680
10k
R657
100k
C657
0.001uF
C646
4.7uF
R658
100k
R654
1.8k
C667
0.0015uF
R685
10k
C673
1uF
R651
47k
R649
150k
IC602 (2/4)
UPC4574G2-E2
C659
4.7uF
16V
R655
1.8k
C653
47pF
R650
47k
C652
47pF
C662
0.0015uF
R667
150k
R648
47
SDTO_AK
009-L6
+3.3V-2
L601
10uH
C600
0.1uF
C661
4.7uF
10V
IC600
AK4550VT-E2
VDD
AOUTR
AOUTL
SDTO
AINR
AINL
SDTI
SCLK
LRCK
MCLK
DEM0
DEM1
PWAD
PWDA
VCOM
VSS
R671
10k
R643 47
R644 47
R645 47
R646 47
SDTI_AK
009-L6
SCLK_AK
008-F9
LRCK_AK
008-C8
MCLK_AK
008-F10
C654
10uF
R647
47
PWD_AK
001-L12
C669
4.7uF
10V
C670
0.1uF
R681
0
CN401 (2/4)
FL603
C631
10uF
16V
D605
RD6.2SB-T1
R626
220k
D606
RD6.2SB-T1
C639
10uF
16V
R628
470
IC602 (3/4)
UPC4574G2-E2
R632
100k
R653
68k
C651
4.7uF
16V
C650
47pF
R629
100k
C640
22pF
R669
33k
CN401 (1/4)
FL604
D607
RD6.2SB-T1
R627
220k
D608
RD6.2SB-T1
R636
100k
Q602
2SC4177-T1L5L6
R635
10k
Q603
2SA1611T1-M5M6
R637
10k
Q604
2SC3326N-TE85L-AB
R634
10k
C633
0.022uF
011-O2
OUT_MUTE
R633
10k
CN603
FL606
D610
RD6.2SB-T1
R684
220k
D611
RD6.2SB-T1
C626
10uF
16V
IC602 (1/4)
UPC4574G2-E2
R652
100k
R631
68k
C666
4.7uF
16V
R659
470
C663
47pF
R630
100k
C641
22pF
R666
33k
E401
R665
100k
Q608
2SC4177-T1L5L6
R656
10k
Q609
2SA1611T1-M5M6
R668
10k
Q610
2SC3326N-TE85L-AB
011-O2
REC_MUTE
R608
10k
R624
10k
C632
0.022uF
C605
0.1uF
C634
100uF
16V
R683
47
CN602
SPOUT_B
SPOUT_A
FB601
FB602
IC605
NJM2073M (TE2)
OUTA
OUTB
VS
+INA
-INA
+INB
-INB
GND
R638
1
C635
0.22uF
C636
4.7uF
R639
1k
C637
0.01uF
R640
47k
C638
0.1uF
R682
47k
C647
0.1uF
011-O2
SP_MUTE
R664
10k
Q605
2SC4177-T1L5L6
R662
10k
R661
100k
Q606
2SA1611T1-M5M6
R660
10k
Q607
2SC3326N-TE85L-AB
R663
10k
C664
0.022uF
+10V
GND-2

MA-107/107P (10/13)

BOARD NO. 1-679-858-11

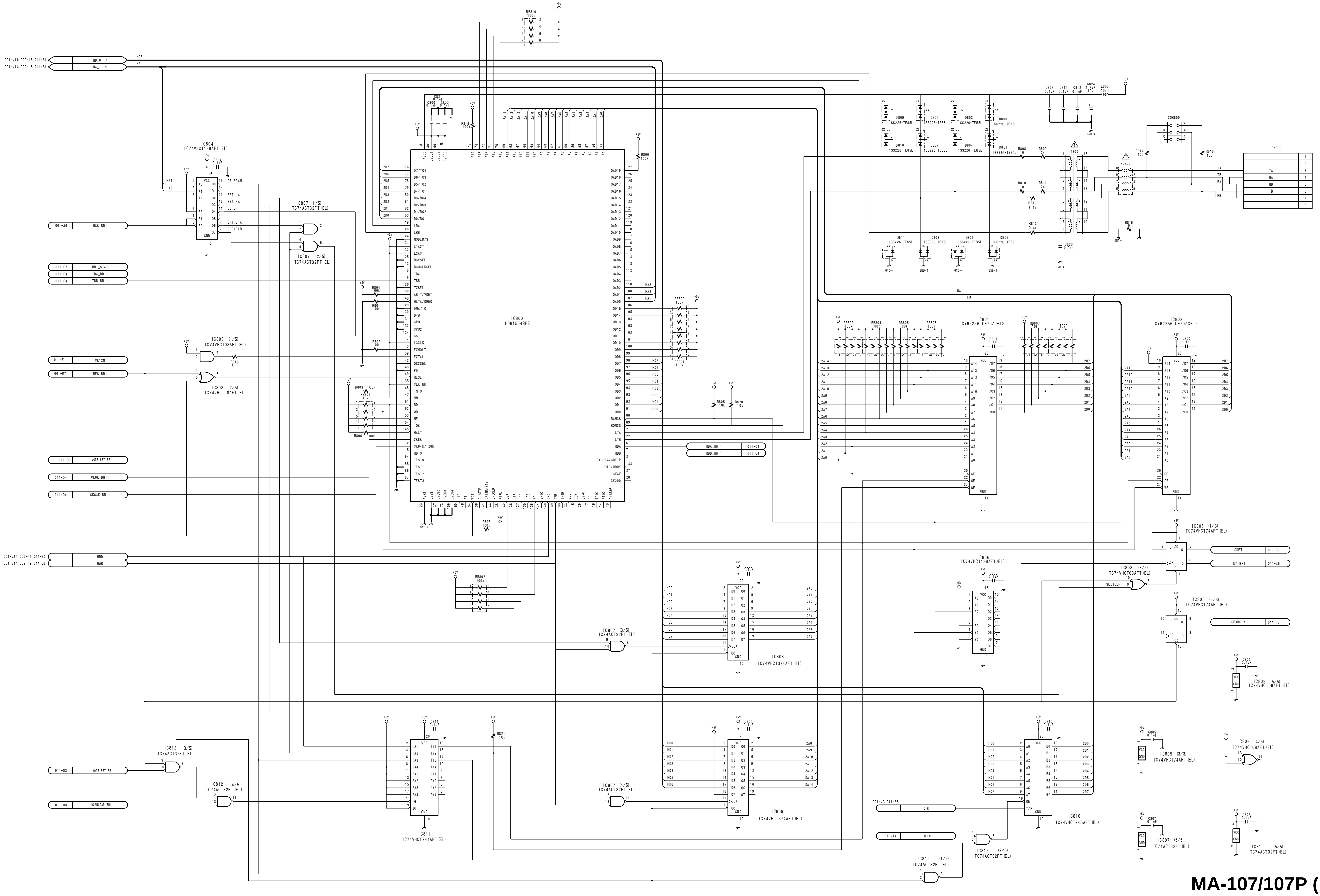
LOT NO. 008-

NMX-153_MA-107_001_10


1
2
3
4
5
IC754 SN74LVC244APW-E05
IC755 TC74LCX16245AFT (EL)
IC751 TC74VHCT244AFT (EL)
IC759 TC74VHCT244AFT (EL)
IC752 TC74VHCT244AFT (EL)
IC753 TC74VHCT244AFT (EL)
IC758 TC74VHCT244AFT (EL)
IC756 TC7WH125FU (TE12R)
IC760 (1/2) TC7SH32FU-TE85R
IC761 (3/5) TC74VHCT00AFT (EL)
IC761 (2/5)
IC761 (1/5) (2/5) TC74VHCT00AFT (EL)
IC750 UPD656460J-171-3EB
IC704 (3/4) TC7WH04FU (TE12R)
IC704 (2/4) TC7WH04FU (TE12R)
IC757 (1/2) TC7SH08FU-TE85R
IC703 SN74LVC244APW-E05
IC790 SBX8031-H
IC780 UPD17226GT-454-E2
IC781 (1/7) TC74VHCT04AFT (EL)
IC781 (5/7) TC74VHCT04AFT (EL)
IC781 (6/7) TC74VHCT04AFT (EL)
IC782 (1/5) TC74VHCT00AFT (EL)
IC782 (2/5) TC74VHCT00AFT (EL)
IC782 (4/5) TC74VHCT00AFT (EL)
IC782 (3/5) TC74VHCT00AFT (EL)
IC781 (4/7) TC74VHCT04AFT (EL)
IC781 (7/7) TC74VHCT04AFT (EL)
IC782 (5/5) TC74VHCT00AFT (EL)
IC757 (2/2) TC7SH08FU-TE85R
IC781 (3/7) TC74VHCT04AFT (EL)
IC781 (2/7) TC74VHCT04AFT (EL)
IC760 TC7SH32FU-TE85R (2/2)
IC761 (5/5) TC74VHCT00AFT (EL)
IC704 (4/4) TC7WH04FU (TE12R)
IC704 (1/4) TC7WH04FU (TE12R)
CN750
CN790
CN781
CN780
FL782
FL783
FL780
FL781
E701
REC_MUTE
SP_MUTE
OUT_MUTE
MIC_SEL
DUAL_V.35
DOWNLOAD_BRI
MODE_SET_BRI
HCS_TDM
IRQ_TDM
INT_BRI
IRQ_OPTION
WAIT_OP
RES_OP
HCS_OP
SRAMCHK
SDET
CAM_LOCK
BRI_STAT
SIRCS_CAM
IRQ_SIR
RES_ALL
DIR_OP
VCP_TDMFS
VCP_TDMCK
VCP_TDMDR
VCP_TDMDX
LV_NETBK
A
B
C
D
E
F
G
H

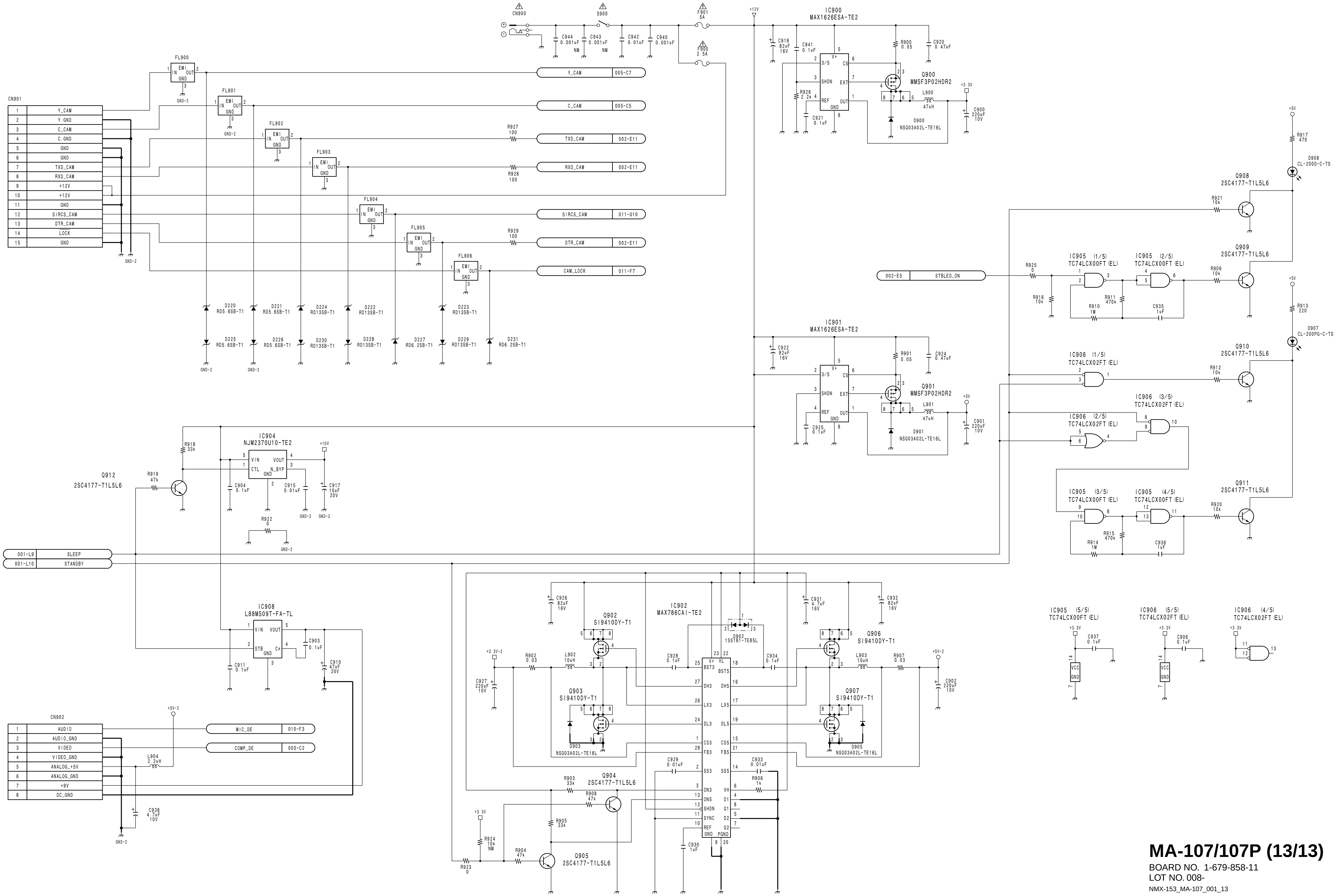
MA-107/107P (11/13)

BOARD NO. 1-679-858-11
LOT NO. 008-
NMX-153_MA-107_001_11

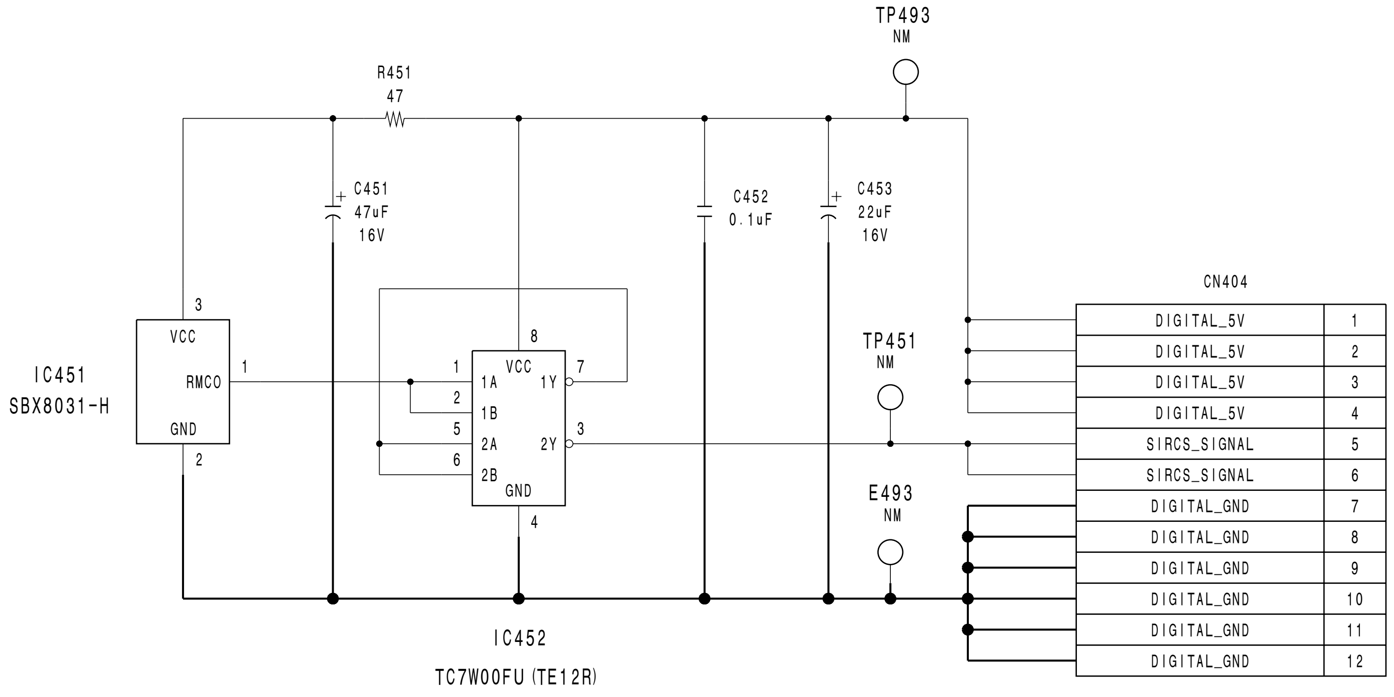

IC800
HD81504RFE
IC801
CY62256LL-70ZC-T2
IC802
CY62256LL-70ZC-T2
IC804
TC74VHCT138AFT (EL)
IC803 (1/5)
TC74VHCT08AFT (EL)
IC803 (2/5)
TC74VHCT08AFT (EL)
IC807 (1/5)
TC74ACT32FT (EL)
IC807 (2/5)
TC74ACT32FT (EL)
IC805 (1/3)
TC74VHCT74AFT (EL)
IC805 (2/3)
TC74VHCT74AFT (EL)
IC806
TC74VHCT138AFT (EL)
IC803 (3/5)
TC74VHCT08AFT (EL)
IC808
TC74VHCT374AFT (EL)
IC807 (3/5)
TC74ACT32FT (EL)
IC809
TC74VHCT374AFT (EL)
IC807 (4/5)
TC74ACT32FT (EL)
IC810
TC74VHCT245AFT (EL)
IC811
TC74VHCT244AFT (EL)
IC812 (3/5)
TC74ACT32FT (EL)
IC812 (4/5)
TC74ACT32FT (EL)
IC812 (1/5)
TC74ACT32FT (EL)
IC812 (2/5)
TC74ACT32FT (EL)
IC812 (5/5)
TC74ACT32FT (EL)
IC803 (4/5)
TC74VHCT08AFT (EL)
IC803 (5/5)
TC74VHCT08AFT (EL)
IC805 (3/3)
TC74VHCT74AFT (EL)
IC807 (5/5)
TC74ACT32FT (EL)
CN800
T800
FL800
COR800
1
2
3
4
5
A
B
C
D
E
F
G
H

MA-107/107P (12/13)

BOARD NO. 1-679-858-11
LOT NO. 008-
NMX-153_MA-107_001_12

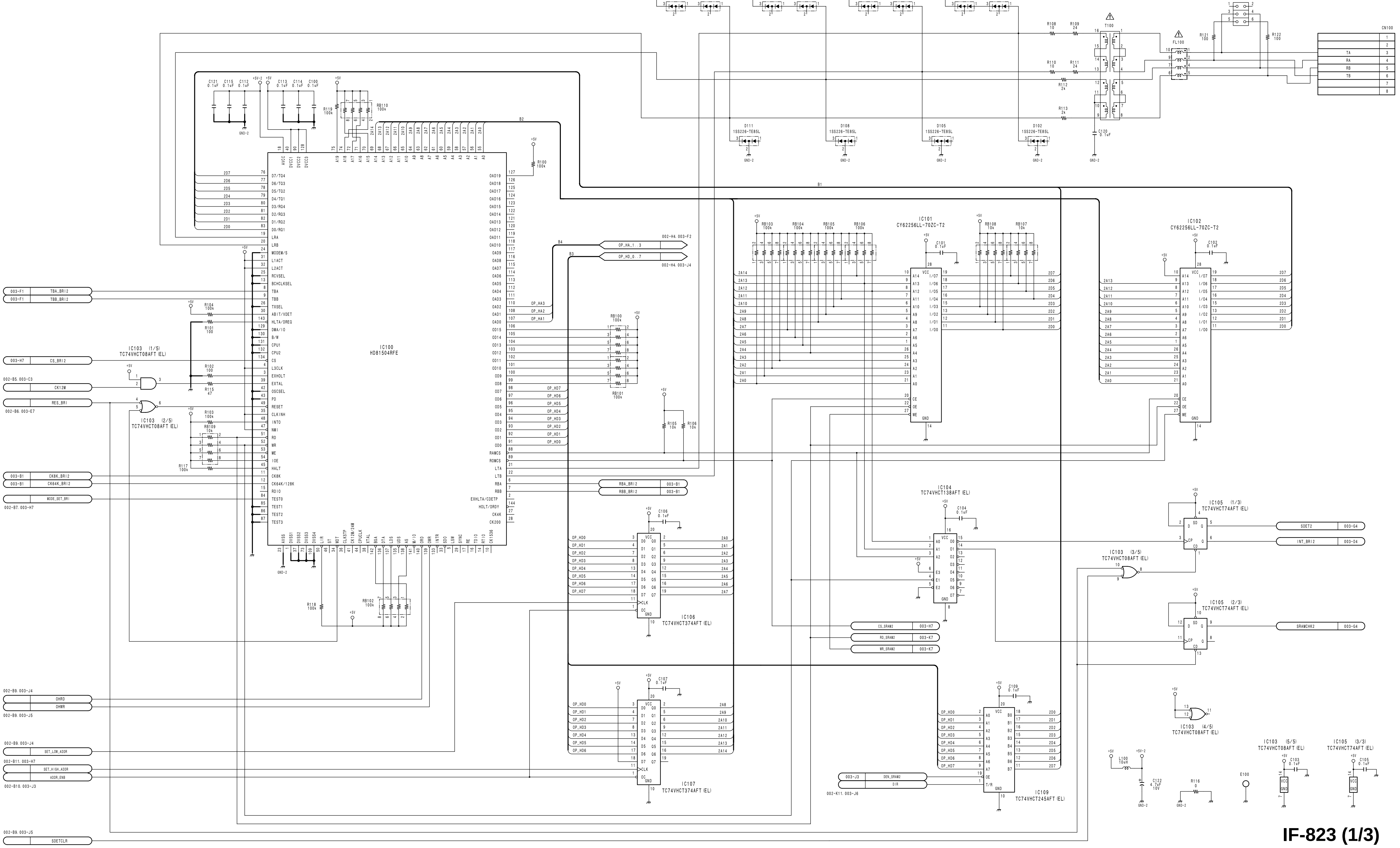

1
2
3
4
5
CN900
S900
F901 5A
F900 2.5A
+12V
C944 0.001uF NM
C943 0.001uF NM
C942 0.01uF
C940 0.001uF
IC900 MAX1626ESA-TE2
Q900 MMSF3P02HDR2
L900 47uH
D900 NSQ03A02L-TE16L
C900 220uF 10V
R900 0.05
C920 0.47uF
C918 82uF 16V
C941 0.1uF
R926 2.2k
C921 0.1uF
CN901
Y_CAM
Y.GND
C_CAM
C.GND
GND
TXD_CAM
RXD_CAM
+12V
SIRCS_CAM
DTR_CAM
LOCK
FL900
FL901
FL902
FL903
FL904
FL905
FL906
EMI
R927 100
R928 100
R929 100
Y_CAM 005-C7
C_CAM 005-C5
TXD_CAM 002-E11
RXD_CAM 002-E11
SIRCS_CAM 011-G10
DTR_CAM 002-E11
CAM_LOCK 011-F7
D220 RD5.6SB-T1
D221 RD5.6SB-T1
D224 RD13SB-T1
D222 RD13SB-T1
D223 RD13SB-T1
D225 RD5.6SB-T1
D226 RD5.6SB-T1
D230 RD13SB-T1
D228 RD13SB-T1
D227 RD6.2SB-T1
D229 RD13SB-T1
D231 RD6.2SB-T1
GND-2
+5V
R917 470
D908 CL-200D-C-TS
Q908 2SC4177-T1L5L6
R921 10k
Q909 2SC4177-T1L5L6
002-E5 STBLED_ON
R925 0
R916 10k
IC905 (1/5) TC74LCX00FT (EL)
IC905 (2/5) TC74LCX00FT (EL)
R910 1M
R911 470k
C935 1uF
R909 10k
R913 220
D907 CL-200PG-C-TS
IC901 MAX1626ESA-TE2
Q901 MMSF3P02HDR2
L901 47uH
D901 NSQ03A02L-TE16L
C901 220uF 10V
R901 0.05
C924 0.47uF
C922 82uF 16V
C925 0.1uF
Q910 2SC4177-T1L5L6
IC906 (1/5) TC74LCX02FT (EL)
R912 10k
IC906 (3/5) TC74LCX02FT (EL)
IC906 (2/5) TC74LCX02FT (EL)
IC905 (3/5) TC74LCX00FT (EL)
IC905 (4/5) TC74LCX00FT (EL)
Q911 2SC4177-T1L5L6
R920 10k
R914 1M
R915 470k
C936 1uF
IC904 NJM2370U10-TE2
+10V
R918 33k
Q912 2SC4177-T1L5L6
R919 47k
C904 0.1uF
C915 0.01uF
C917 10uF 20V
R922 0
001-L9 SLEEP
001-L10 STANDBY
IC908 L88MS09T-FA-TL
C911 0.1uF
C903 0.1uF
C910 47uF 20V
CN902
AUDIO
AUDIO_GND
VIDEO
VIDEO_GND
ANALOG_+5V
ANALOG_GND
+9V
DC_GND
+5V-2
L904 2.2uH
C938 4.7uF 10V
MIC_DE 010-F3
COMP_DE 005-C2
C926 82uF 16V
Q902 SI9410DY-T1
IC902 MAX786CAI-TE2
D902 1SS181-TE85L
C931 4.7uF 16V
C932 82uF 16V
Q906 SI9410DY-T1
+3.3V-2
R902 0.03
L902 10uH
C927 220uF 10V
C928 0.1uF
C934 0.1uF
L903 10uH
R907 0.03
C902 220uF 10V
Q903 SI9410DY-T1
D903 NSQ03A02L-TE16L
Q907 SI9410DY-T1
D905 NSQ03A02L-TE16L
C929 0.01uF
C933 0.01uF
R906 1k
R903 33k
Q904 2SC4177-T1L5L6
R908 47k
R905 33k
+3.3V
R924 10k NM
R904 47k
Q905 2SC4177-T1L5L6
R923 0
C930 1uF
IC905 (5/5) TC74LCX00FT (EL)
IC906 (5/5) TC74LCX02FT (EL)
IC906 (4/5) TC74LCX02FT (EL)
C937 0.1uF
C906 0.1uF
A
B
C
D
E
F
G
H

MA-107/107P (13/13)
BOARD NO. 1-679-858-11
LOT NO. 008-
NMX-153_MA-107_001_13


TP493
NM
R451
47
C451
47uF
16V
C452
0.1uF
C453
22uF
16V
CN404
IC451
SBX8031-H
VCC
RMCO
GND
3
1
2
8
1
2
5
6
VCC
1A
1B
2A
2B
GND
1Y
2Y
7
3
4
TP451
NM
E493
NM
IC452
TC7W00FU (TE12R)
DIGITAL_5V 1
DIGITAL_5V 2
DIGITAL_5V 3
DIGITAL_5V 4
SIRCS_SIGNAL 5
SIRCS_SIGNAL 6
DIGITAL_GND 7
DIGITAL_GND 8
DIGITAL_GND 9
DIGITAL_GND 10
DIGITAL_GND 11
DIGITAL_GND 12

RX-47A
BOARD NO. 1-679-864-11
LOT NO. 008-
NMX-153_RX-47A_001_1

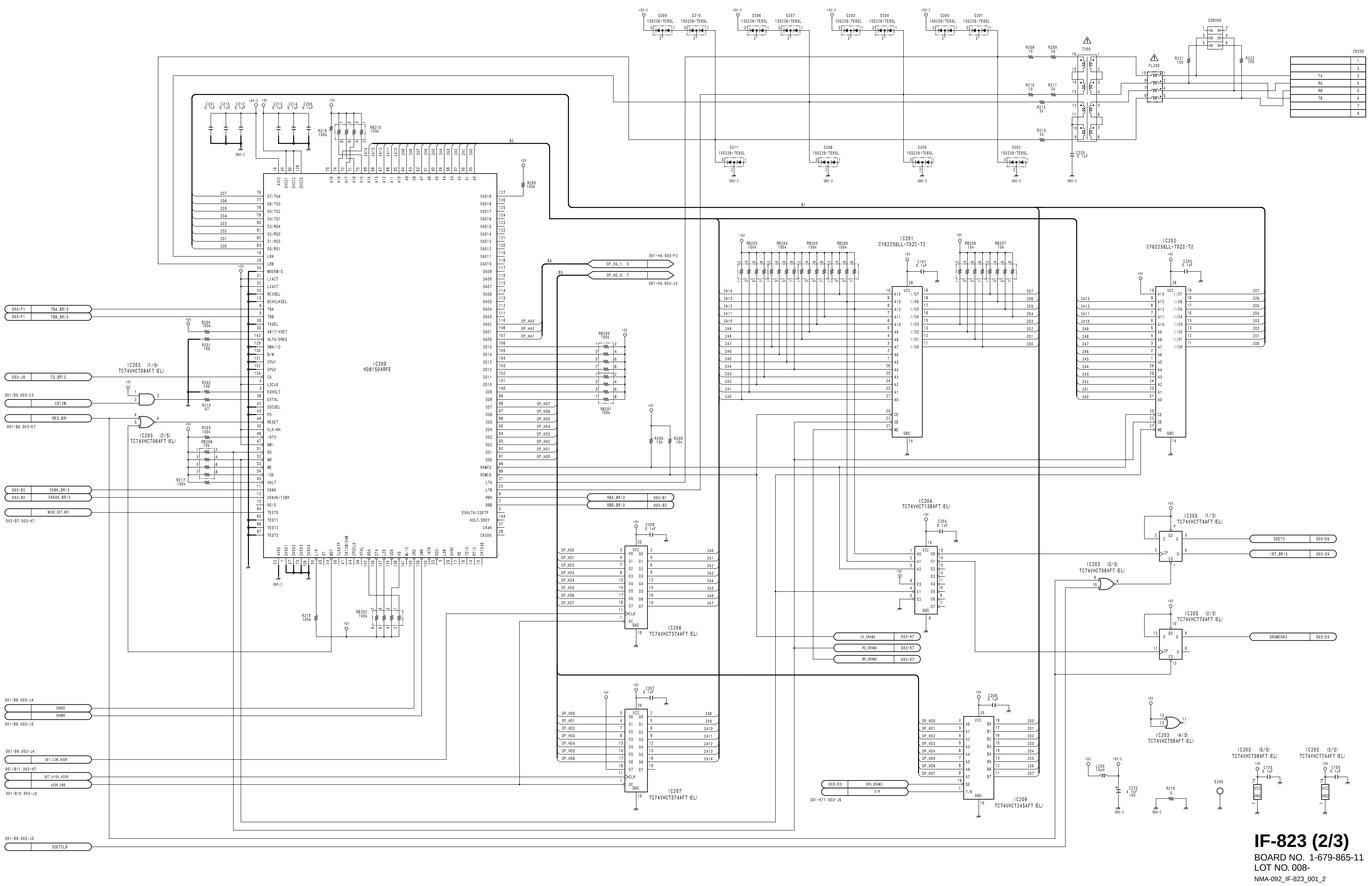
Option boards


IC100
HD81504RFE
IC101
CY62256LL-70ZC-T2
IC102
CY62256LL-70ZC-T2
IC103 (1/5)
TC74VHCT08AFT (EL)
IC103 (2/5)
TC74VHCT08AFT (EL)
IC103 (3/5)
TC74VHCT08AFT (EL)
IC103 (4/5)
TC74VHCT08AFT (EL)
IC103 (5/5)
TC74VHCT08AFT (EL)
IC104
TC74VHCT138AFT (EL)
IC105 (1/3)
TC74VHCT74AFT (EL)
IC105 (2/3)
TC74VHCT74AFT (EL)
IC105 (3/3)
TC74VHCT74AFT (EL)
IC106
TC74VHCT374AFT (EL)
IC107
TC74VHCT374AFT (EL)
IC109
TC74VHCT245AFT (EL)
T100
FL100
COR100
CN100
TA
RA
RB
TB
D100 D101 D102 D103 D104 D105 D106 D107 D108 D109 D110 D111
1SS226-TE85L
TBA_BRI2
TBB_BRI2
CS_BRI2
CK12M
RES_BRI
CK8K_BRI2
CK64K_BRI2
MODE_SET_BRI
OHRD
OHWR
SET_LOW_ADDR
SET_HIGH_ADDR
ADDR_ENB
SDETCLR
OP_HA_1..3
OP_HD_0..7
RBA_BRI2
RBB_BRI2
CS_SRAM2
RD_SRAM2
WR_SRAM2
DEN_SRAM2
DIR
SDET2
INT_BRI2
SRAMCHK2
L100
E100
B1
B2
B3
B4
A
B
C
D
E
F
G
H
1
2
3
4
5

IF-823 (1/3)

BOARD NO. 1-679-865-11
LOT NO. 008-
NMA-092_IF-823_001_1

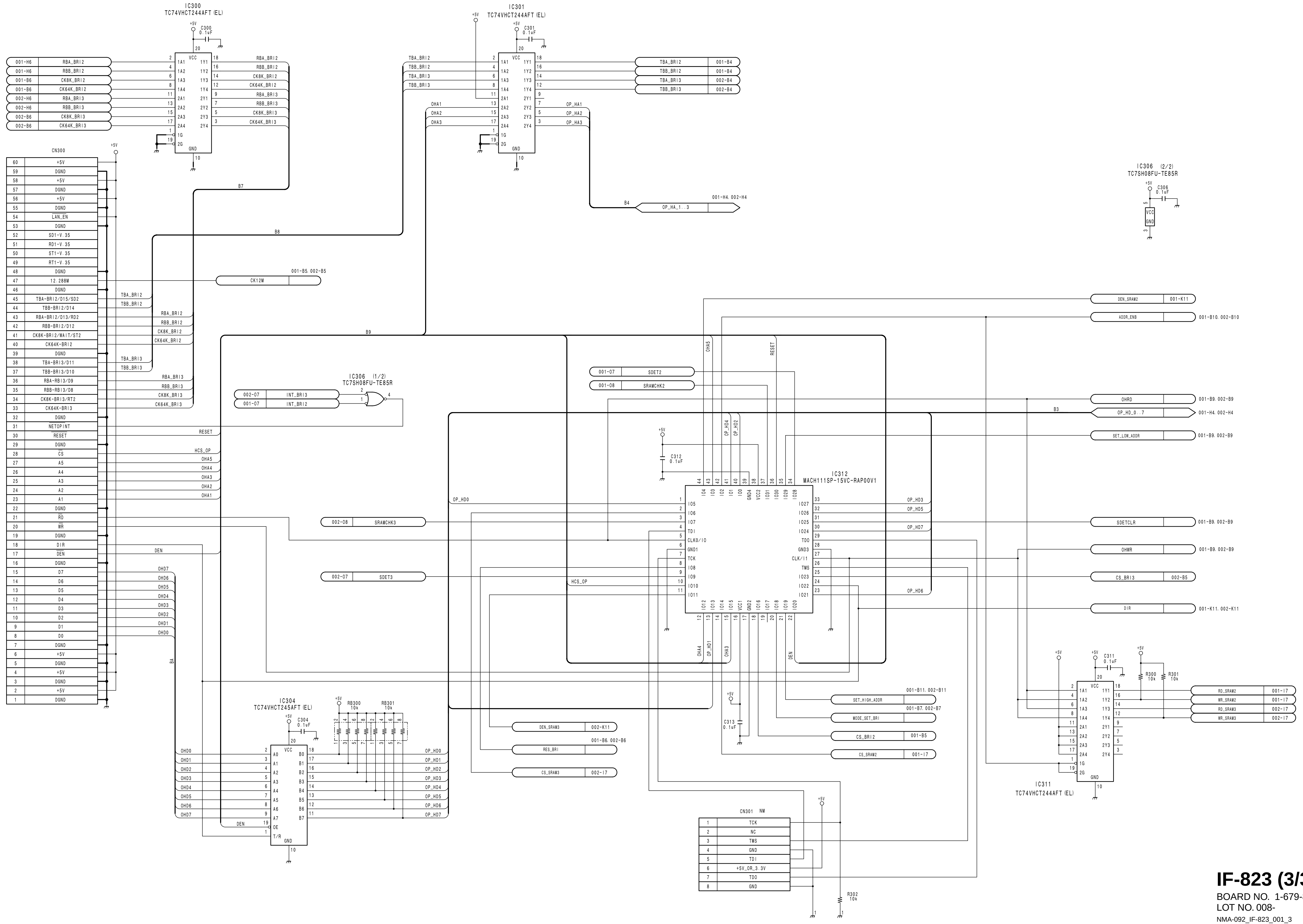
http://getMANUAL.com


1
2
3
4
5
IC200
HD81504RFE
IC201
CY62256LL-70ZC-T2
IC202
CY62256LL-70ZC-T2
IC203 (1/5)
TC74VHCT08AFT (EL)
IC203 (2/5)
TC74VHCT08AFT (EL)
IC203 (3/5)
TC74VHCT08AFT (EL)
IC203 (4/5)
TC74VHCT08AFT (EL)
IC203 (5/5)
TC74VHCT08AFT (EL)
IC204
TC74VHCT138AFT (EL)
IC205 (1/3)
TC74VHCT74AFT (EL)
IC205 (2/3)
TC74VHCT74AFT (EL)
IC205 (3/3)
TC74VHCT74AFT (EL)
IC206
TC74VHCT374AFT (EL)
IC207
TC74VHCT374AFT (EL)
IC209
TC74VHCT245AFT (EL)
D209 D210 D206 D207 D203 D204 D200 D201
D211 D208 D205 D202
1SS226-TE85L
T200
FL200
COR200
CN200
TA
RA
RB
TB
B1
B2
B3
B4
003-F1 TBA_BRI3
003-F1 TBB_BRI3
003-J6 CS_BRI3
001-B5, 003-C3 CK12M
RES_BRI
001-B6, 003-E7
003-B2 CK8K_BRI3
003-B2 CK64K_BRI3
MODE_SET_BRI
002-B7, 003-H7
001-B9, 003-J4
DHRD
DHWR
001-B9, 003-J5
001-B9, 003-J4
SET_LOW_ADDR
001-B11, 003-H7
SET_HIGH_ADDR
ADDR_ENB
001-B10, 003-J3
001-B9, 003-J5
SDETCLR
001-H4, 003-F2
OP_HA_1 : 3
OP_HD_0 : 7
001-H4, 003-J4
RBA_BRI3 003-B1
RBB_BRI3 003-B2
CS_SRAM3 003-H7
RD_SRAM3 003-K7
WR_SRAM3 003-K7
003-E3 DEN_SRAM3
DIR
001-K11, 003-J6
SDET3 003-E6
INT_BRI3 003-D4
SRAMCHK3 003-E5
E200
GND-2
+5V
+5V-2

IF-823 (2/3)

BOARD NO. 1-679-865-11
LOT NO. 008-
NMA-092_IF-823_001_2

IF-823 (3/3)

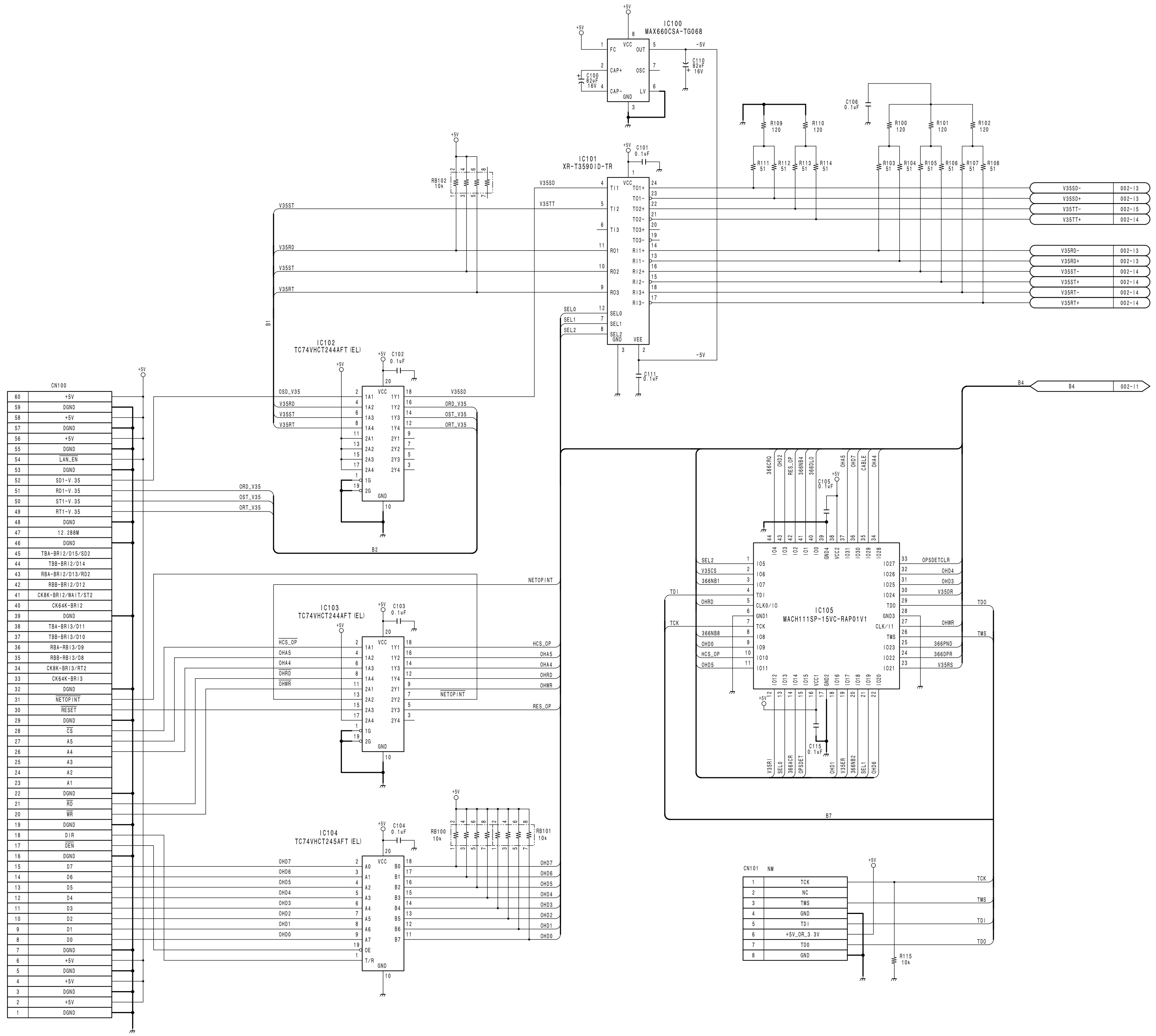

IC300
TC74VHCT244AFT (EL)
IC301
TC74VHCT244AFT (EL)
IC306 (2/2)
TC7SH08FU-TE85R
CN300
IC306 (1/2)
TC7SH08FU-TE85R
IC312
MACH111SP-15VC-RAP00V1
IC304
TC74VHCT245AFT (EL)
RB300
10k
RB301
10k
CN301 NM
IC311
TC74VHCT244AFT (EL)
R300
10k
R301
10k
R302
10k
C300
0.1uF
C301
0.1uF
C304
0.1uF
C306
0.1uF
C311
0.1uF
C312
0.1uF
C313
0.1uF
+5V
DGND
LAN_EN
12.288M
RESET
DEN
CK12M
OP_HA_1..3
OP_HD_0..7
DEN_SRAM2
ADDR_ENB
SDET2
SRAMCHK2
SRAMCHK3
SDET3
INT_BRI3
INT_BRI2
OHRD
SET_LOW_ADDR
SDETCLR
OHWR
CS_BRI3
DIR
SET_HIGH_ADDR
MODE_SET_BRI
CS_BRI2
CS_SRAM2
DEN_SRAM3
REG_BRI
CS_SRAM3
RD_SRAM2
WR_SRAM2
RD_SRAM3
WR_SRAM3
TCK
NC
TMS
GND
TDI
+5V_OR_3.3V
TDO

IF-823 (3/3)

BOARD NO. 1-679-865-11
LOT NO. 008-
NMA-092_IF-823_001_3

8-22

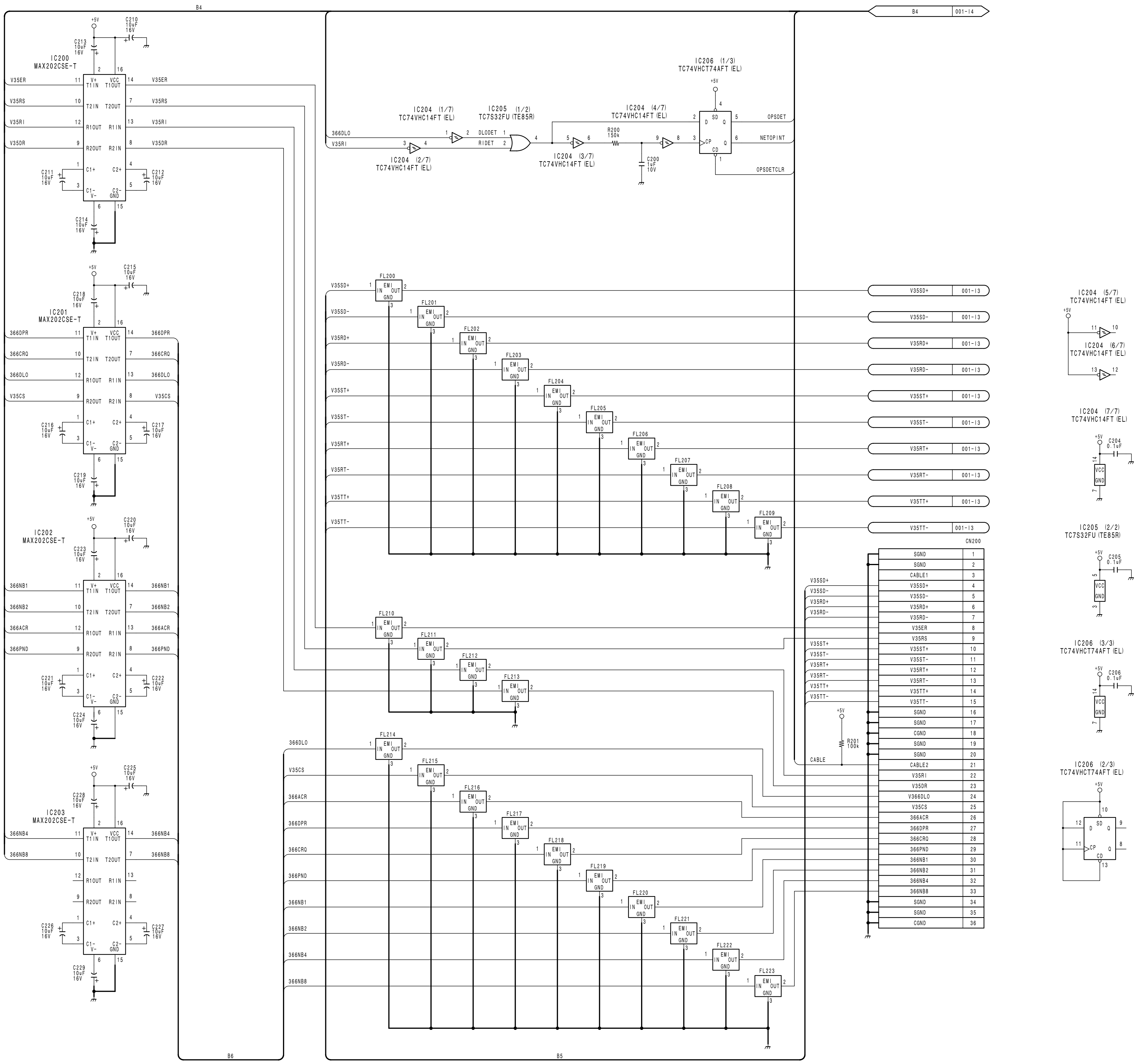
IF-824 (1/2)


IC100
MAX660CSA-TG068
C100 82uF 16V
C110 82uF 16V
IC101
XR-T3590ID-TR
C101 0.1uF
RB102 10k
C106 0.1uF
R109 120
R110 120
R100 120
R101 120
R102 120
R111 51
R112 51
R113 51
R114 51
R103 51
R104 51
R105 51
R106 51
R107 51
R108 51
V35SD- 002-I3
V35SD+ 002-I3
V35TT- 002-I5
V35TT+ 002-I4
V35RD- 002-I3
V35RD+ 002-I3
V35ST- 002-I4
V35ST+ 002-I4
V35RT- 002-I4
V35RT+ 002-I4
B4 002-I1
IC102
TC74VHCT244AFT(EL)
C102 0.1uF
C111 0.1uF
CN100
IC103
TC74VHCT244AFT(EL)
C103 0.1uF
IC104
TC74VHCT245AFT(EL)
C104 0.1uF
RB100 10k
RB101 10k
IC105
MACH111SP-15VC-RAP01V1
C105 0.1uF
C115 0.1uF
CN101 NM
R115 10k
B1
B2
B7
1
2
3
4
5

IF-824 (1/2)

BOARD NO. 1-679-866-11
LOT NO. 008-
NMA-093_IF-824_001_1

8-23


1
2
3
4
5
IC200
MAX202CSE-T
IC201
MAX202CSE-T
IC202
MAX202CSE-T
IC203
MAX202CSE-T
IC204 (1/7)
TC74VHC14FT (EL)
IC204 (2/7)
TC74VHC14FT (EL)
IC204 (3/7)
TC74VHC14FT (EL)
IC204 (4/7)
TC74VHC14FT (EL)
IC204 (5/7)
TC74VHC14FT (EL)
IC204 (6/7)
TC74VHC14FT (EL)
IC204 (7/7)
TC74VHC14FT (EL)
IC205 (1/2)
TC7S32FU (TE85R)
IC205 (2/2)
TC7S32FU (TE85R)
IC206 (1/3)
TC74VHCT74AFT (EL)
IC206 (2/3)
TC74VHCT74AFT (EL)
IC206 (3/3)
TC74VHCT74AFT (EL)
R200 150k
R201 100k
C200 1uF 10V
CN200
OPSDET
NETOPINT
OPSDETCLR
CABLE
B4
B5
B6
001-14
001-13

IF-824 (2/2)

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NMA-093_IF-824_001_2

A
B
C
D
E
F
G
H

PCS-1600 (J, UC)
PCS-1600P (CE) J, E
9-955-262-21

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